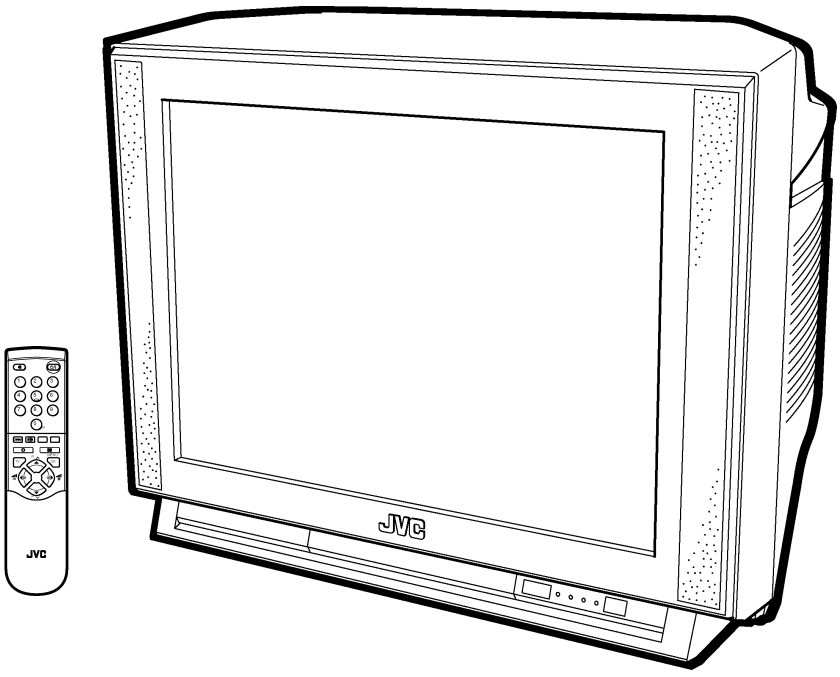
JVC

SERVICE MANUAL

COLOUR TELEVISION

AV29A10EUS

BASIC CHASSIS
MF



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SPECIFICATIONS

Item		CONTENTS
Dimensions (W × H × D)		732mm × 585mm × 509mm
Mass		46.0kg
TV RF System		CCIR B/G, I, D/K, L, L'
Colour System		PAL / SECAM NTSC 3.58 / 4.43 (Play back only)
Sound System		A2 (B/G, D/K), NICAM (B/G, I, D/K, L)
Teletext System		Fastext(United Kingdom system), TOP(German system), WST(World standard system)
Receiving Frequency		
	VHF	47MHz～ 470MHz
	UHF	470MHz～862MHz
	French CATV	116MHz～172MHz / 220MHz～469MHz
Intermediate Frequency		
	VIF Carrier	38.9MHz(B/G, D/K, I, L), 33.95MHz(L')
	SIF Carrier	33.4MHz(5.5MHz : B/G) / 32.9MHz(6.0MHz : I) 32.4MHz(6.5MHz : D/K, L) / 40.45MHz(6.5MHz : L')
Colour Sub Carrier		
	PAL	4.43MHz
	SECAM	4.40625MHz / 4.25MHz
	NTSC	3.58MHz / 4.43MHz
Power Input		AC 220V～240V , 50Hz
Power Consumption		180W(Maximum), 152W(Average), 2.8W(Standby), 152W/h
Picture Tube		Visible size : 69.4cm, Measured diagonally
High Voltage		$31.0kV^{+1kV}_{-1.5kV}$ (at zero beam current)
Speaker		4cm × 16cm round × 2
Audio Output		Rated power output : 7.5W+7.5W
Input / Output terminals		
	EXT-1	21-pin Euro connector (SCART socket), Video, Audio L/R, RGB signal input are available TV broadcast output (Video and Audio L/R) are available
	EXT-2	21-pin Euro connector (SCART socket), S-Video, Video, Audio L/R, RGB signal input are available AV selector (TV LINK) function is available
	EXT-3	21-pin Euro connector (SCART socket), Video, Audio L/R, RGB signal input are available
	EXT-4	RCA pin type, S-Video, Video, Audio L/R signal input are available
	Audio output	RCA pin type, Variable audio L/R and sub woofer output are available
Aerial socket		75Ω unbalanced, Coaxial
Headphone jack		Stereo mini jack (ϕ 3.5mm)
Remote Control Unit		RM-C54 (AAA/R03 dry cell battery × 2)

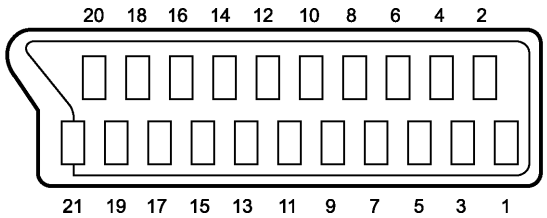
Design & specifications are subject to change without notice.

■21-pin Euro connector (SCART socket) : EXT-1 / EXT-2 / EXT-3

(P-P= Peak to Peak, S-W= Sync tip to white peak, B-W= Blanking to white peak)

Pin	Signal Designation	Matching Value	EXT-1	EXT-2	EXT-3
1	AUDIO R output	500mVrms(Nominal), Low impedance	○ (TV OUT)	○ (LINE OUT)	NC
2	AUDIO R input	500mVrms(Nominal), High impedance	○	○	○
3	AUDIO L output	500mVrms(Nominal), Low impedance	○ (TV OUT)	○ (LINE OUT)	NC
4	AUDIO GND		○	○	○
5	GND (B)		○	○	○
6	AUDIO L input	500mVrms(Nominal), High impedance	○	○	○
7	B input	$700mV_{B-W}$, 75Ω	○	○	NC
8	FUNCTON SW (SLOW SW)	Low : 0-3V, High : 8-12V, High impedance	○	○	○
9	GND (G)		○	○	○
10	SCL3		NC	○	NC
11	G input	$700mV_{B-W}$, 75Ω	○	○	NC
12	SDA3		NC	○	NC
13	GND (R)		○	○	○
14	GND (Y_S)		○	○	NC
15	R / C input	R : $700mV_{B-W}$, 75Ω C : $300mV_{P-P}$, 75Ω	○ (only R)	○	○ (only C)
16	Ys input	Low : 0 - 0.4, High : 1 - 3V, 75Ω	○	○	NC
17	GND(VIDEO output)		○	○	○
18	GND(VIDEO input)		○	○	○
19	VIDEO output	$1V_{P-P}$(Negative going sync), 75Ω	○ (TV)	○ (LINE OUT)	NC
20	VIDEO / Y input	$1V_{P-P}$(Negative going sync), 75Ω	○ (only VIDEO input)	○	○
21	COMMON GND		○	○	○

[Pin assignment]



SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

4. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.

5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).

6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.

7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.

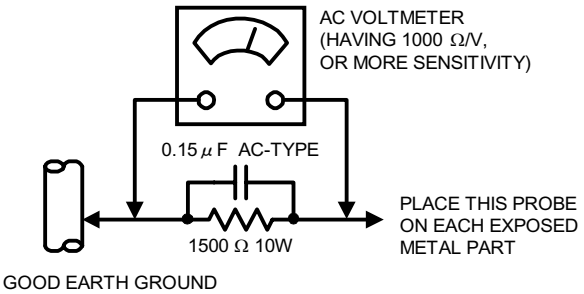
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

9. **Isolation Check**
   (Safety for Electrical Shock Hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

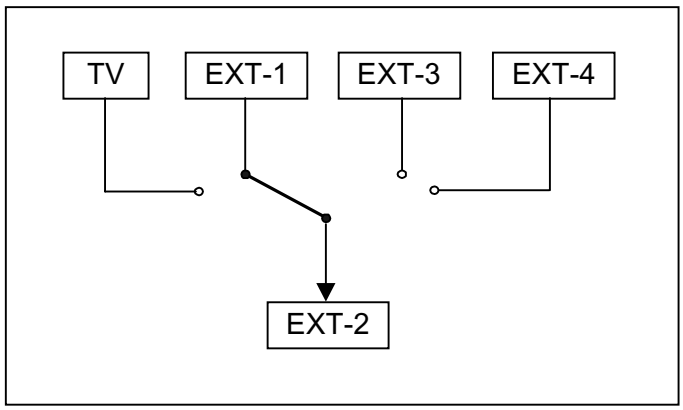
(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

● **Alternate Check Method**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



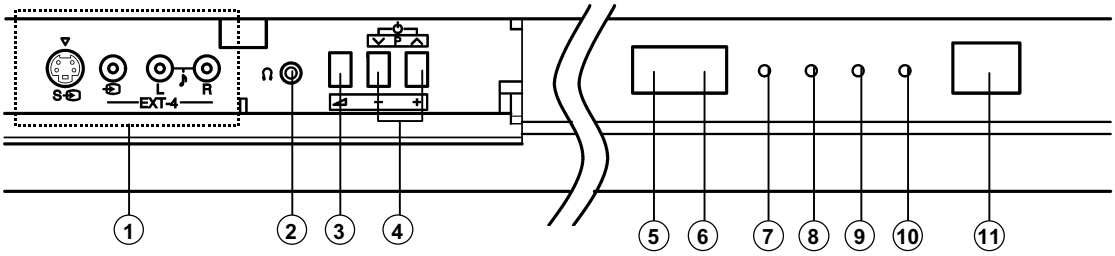
FEATURES

- This TV model has 100Hz vertical scanning for the screen refreshing. And pure flat CRT reproduce fine textured.
- Digi Pure pro : Auto digital pure with motion picture compensation.
- Built in dual screen system, Picture and Text screen able to displayed.
- The TELETEXT SYSTEM has a built-in FASTEXT (UK system), TOP (German system) and WST (world standard system) system.
- Because this TV unit can receive the multiplex broadcast, users can enjoy music programs and sporting events with live realism. In addition, BILINGUAL programs can be heard in their original language.
- Users can make VCR dubbing of picture and sound by controlling the AV selector to select an optional source at the EXT-2 output shown in figure bellow.



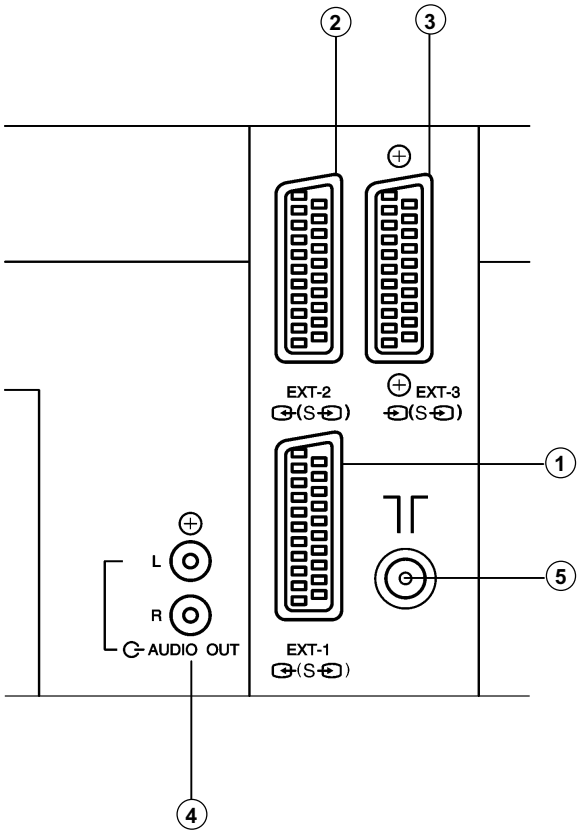
FUNCTIONS

■FRONT CONTROL PANEL



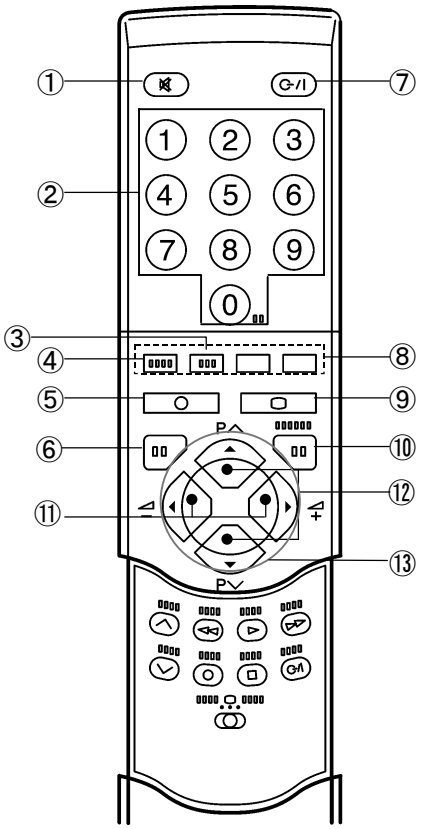
① EXIT-4 terminals
② Headphone jack (mini jack)
③ Volume Set (◿) button
④ P ∨/∧ buttons or Volume (◿) -/+ buttons
⑤ Remote control sensor
⑥ ECO sensor
⑦ Hyper Sound lamp
⑧ ECO lamp
⑨ Sleep timer lamp
⑩ Power lamp
⑪ Main power button

■REAR TERMINAL



①EXT-1(IN/OUT) Terminal
②EXT-2(IN/OUT) Terminal
③EXT-3(IN) Terminal
④Audio out(L, R) Terminal
⑤Aerial Socket

■REMOTE CONTROL UNIT



① Muting Key
② Number Key
③ Hyper sound Key
④ Zoom Key
⑤ Information Key
⑥ TV Key
⑦ Stand-by Key
⑧ Colour Key
⑨ Text Key
⑩ Menu / Ok Key
⑪ Volume -/+ Key
⑫ Channel Up/Down Key
⑬ Pr(Program) Key
Up/Down and Left/Right

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power plug.
2. As shown in the Fig. 1, remove the **14** screws marked **A**.
3. Withdraw the rear cover toward you.

REMOVING THE CHASSIS

- After removing the rear cover.

1. Slightly raise the both sides of the chassis by hand and remove the 2 claws under the both sides of the chassis from the front cabinet.
2. Withdraw the chassis backward.
   (If necessary, detach the wire clamp, connectors etc.)

REMOVING THE AV TERMINAL BOARD

- After removing the rear cover.

1. As shown in Fig. 1, remove the **3** screws marked **B**.
2. As shown in Fig. 2, remove the 2 claws marked **E** under the CHASSIS.
3. As shown in Fig. 2, remove the AV TERMINAL BOARD slightly in the direction of the arrow **F**.

REMOVING THE SPEAKER

- After removing the rear cover and chassis.

1. As shown in the Fig. 1, remove the **2** screws marked **D**.

NOTE : When removing the screws marked **D** of the speaker, remove the lower side screw first. Then remove the upper one.

2. Remove the 2 screws **C** attaching the speaker.
3. Follow the same steps when removing the other hand speaker.

CHECKING THE PW BOARD

To check the back side of the PW Board.

1) Pull out the chassis. (Refer to REMOVING THE CHASSIS).
2) Erect the chassis vertically so that you can easily check the back side of the PW Board.

[CAUTION]

- When erecting the chassis, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the wire connector is properly connected.
- When conducting a check with power supplied, be sure to confirm that the CRT EARTH WIRE (BRAIDED ASS'Y) is connected to the CRT SOCKET PW board.

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

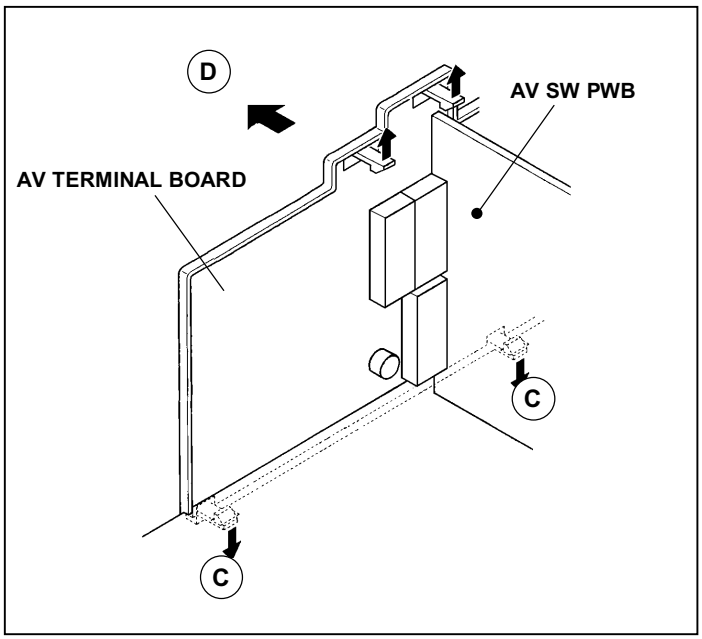
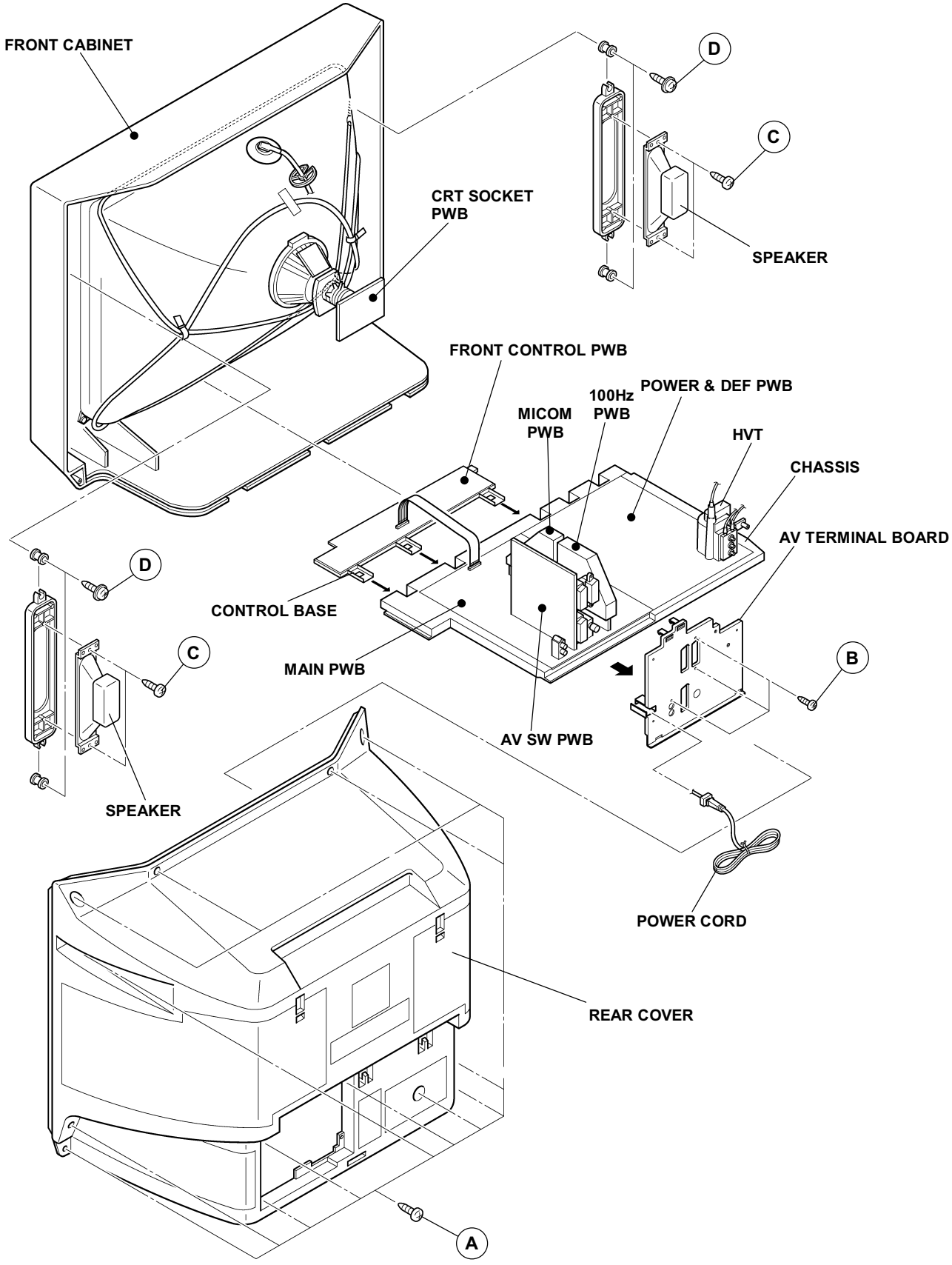


Fig. 2


FRONT CABINET
D
C
CRT SOCKET PWB
SPEAKER
FRONT CONTROL PWB
POWER & DEF PWB
100Hz PWB
MICOM PWB
HVT
CHASSIS
AV TERMINAL BOARD
D
CONTROL BASE
C
MAIN PWB
B
AV SW PWB
SPEAKER
POWER CORD
REAR COVER
A

REMOVING THE CRT

Replacement of the CRT should be performed by 2 or more persons.
After removing the rear cover, chassis and anode wires etc.

1. Prepare the CRT change table, the CRT change table should also be covered with such soft cloth as shown in Fig.3.
   The CRT change table should preferably be smaller that the CRT surface, and its height be about 35cm.
2. While keeping the CRT down surface, mount the TV set on the CRT change table as shown in Fig.3.
3. Remove 4 screws marked by arrows with a box type screw driver as shown in Fig.4.
4. Since the cabinet will drop when screws have been removed, be sure to support the cabinet with hands.
5. After 4 screws have been removed, put the cabinet slowly on cloth. At this time, be carefully so as not to damage the front surface of the cabinet as shown in Fig.5.
6. The CRT should be assembled according to the opposite sequence of its disintegrated steps.

[About CRT Spacer]
An appropriate CRT spacer should be used in the corresponding CRT in accordance with the type of the CRT.
When a CRT is replaced, special attention should be paid to this matter.

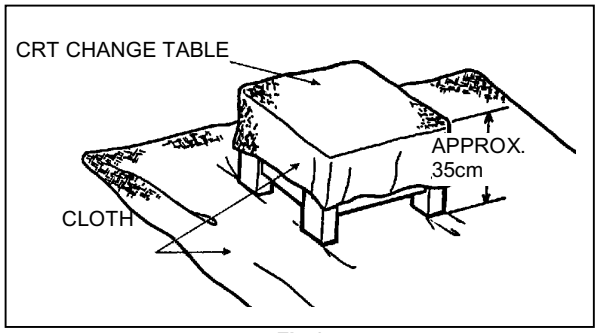


Fig.3

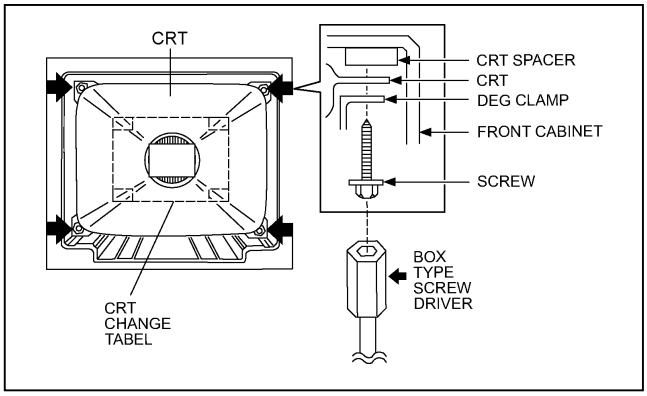


Fig.4

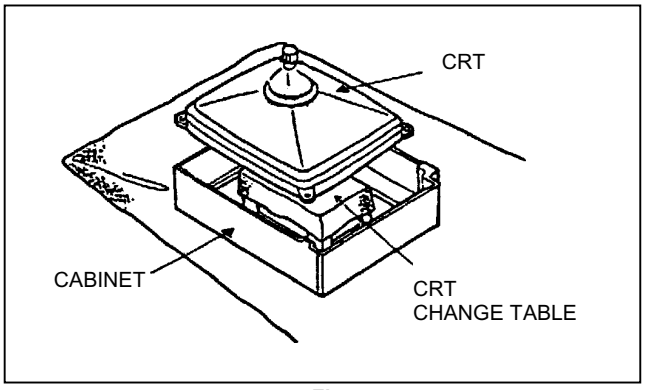


Fig. 5

COATING OF SILICON GREASE FOR ELECTRICAL INSULATION ON THE CRT ANODE CAP SECTION.

Subsequent to replacement of the CRT and HV transformer or repair of the anode cap, etc. by dismounting them, be sure to coat silicon grease for electrical insulation as shown in Fig.6.
Wipe around the anode button with clean and dry cloth. (Fig.6)
Coat silicon grease on the section around the anode button. At this time, take care so that any silicon greases dose not stick to the anode button. (Fig.7)
Silicon grease product No. KS - 650N

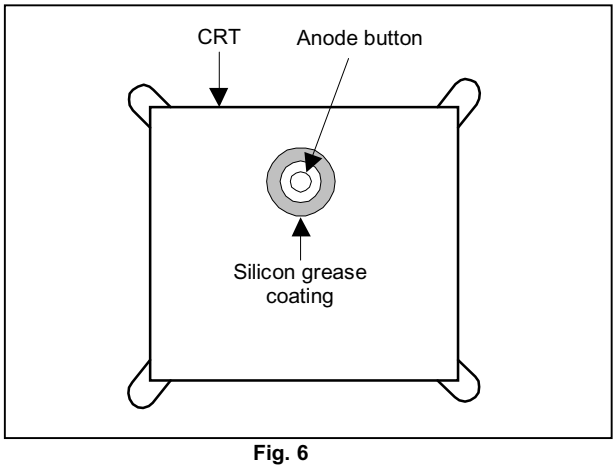


Fig. 6

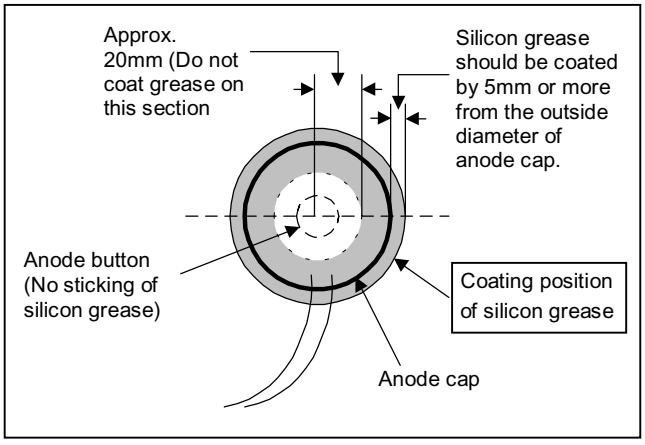


Fig. 7

REPLACEMENT OF MEMORY ICs

1. Memory ICs

This TV use memory ICs. In the memory ICs, there are memorized data for correctly operating the video and deflection circuits. When replacing memory ICs, be sure to use ICs written with the initial values of data.

2. Procedure for replacing memory ICs

PROCEDURE
(1) **Power off** Switch the power off and disconnect the power plug.
(2) **Replace ICs**. Be sure to use memory ICs written with the initial data values.
(3) **Power on** Connect the power plug and switch the power on.
(4) **Check and set SYSTEM CONSTANT SET** **It must not adjust without signal.** 1) Press the **INFORMATION** key and the **MUTING** key of the REMOTE CONTROL UNIT simultaneously. 2) The SERVICE MENU screen of Fig. 1 will be displayed. 3) While the SERVICE MENU is displayed, press the **INFORMATION** key and **MUTING** key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed. 4) Check the setting values of the SYSTEM CONSTANT SET of Table 1. If the value is different, select the setting item with the **FUNCTION UP/DOWN** key, and set the correct value with the **FUNCTION LEFT/RIGHT** key. 5) Press the **MENU**(**OK**) key to memorize the setting value. 6) Press the **INFORMATION** key twice, and return to the normal screen.
(5) **Setting of receive channels** Set the receive channel. For setting, refer to the OPERATING INSTRUCTIONS.
(6) **Setting of SERVICE MENU** Verify the setting items of the **SERVICE MENU** of Table 2, and reset where necessary. For setting, refer to the SERVICE ADJUSTMENTS.
(7) **User settings** Check the user setting values of Table 3, and if setting value is different, set the correct value. For setting, refer to the OPERATING INSTRUCTIONS.

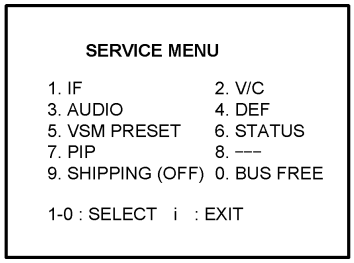


Fig.1

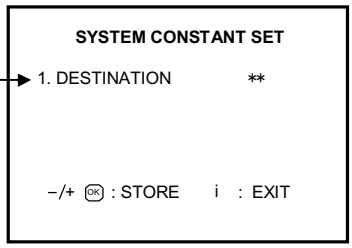
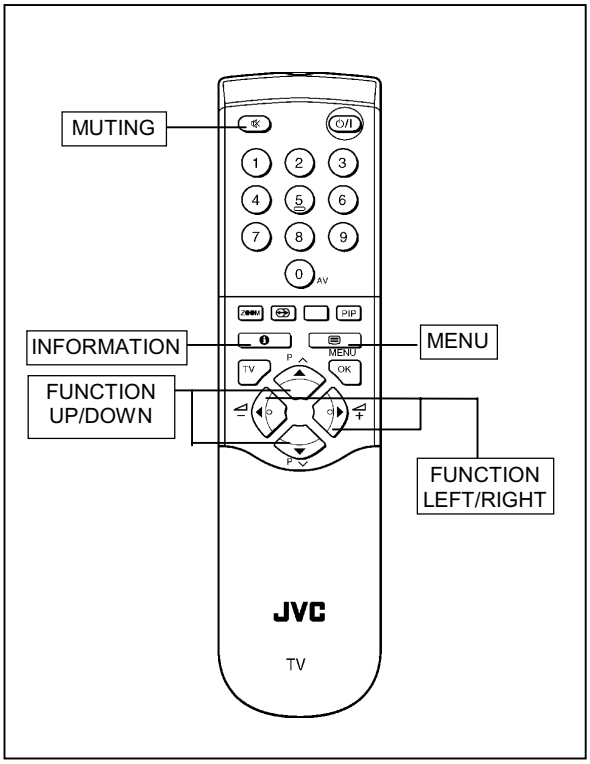


Fig.2

2. CRT TYPE	4 : 3
3. PURITY	NO
4. PICTURE TILT	NO
5. DIGIPURE PRO	YES
6. PIP	1 TUNER
7. PIC & TEXT	NO
8. DOLBY	NO
9. BBE	YES
10. PROGRESSIVE	YES
11. TDA9178	YES
12. TONE IC	NO
13. FLAT	YES

REMOTE CONTROL UNIT KEY ASSIGNMENT



SETTING VALUES OF SYSTEM CONSTANT SET (TABLE 1)

Setting item	Setting content	Setting Value
1. DESTINATION	EK → EU → EI	EU
2. CRT TYPE	16 : 9 → 4 : 3	4 : 3
3. PURITY	YES → NO	NO
4. PICTURE TILT	YES → NO	NO
5. DIGIPURE PRO	YES → NO	YES
6. PIP	1 TUNER → 2 TUNER → NO	1 TUNER
7. PIC & TEXT	YES → NO	NO
8. DOLBY	YES → NO	NO
9. BBE	YES → NO	YES
10. PROGRESSIVE	YES → NO	YES
11. TDA9178	YES → NO	YES
12. TONE IC	YES → NO	NO
13. FLAT	YES → NO	YES

SERVICE MENU SETTING ITEMS (TABLE 2)

Setting item	Setting value	Setting item	Setting value
1. IF	1. VCO 2. ATT ON/OFF [Do not adjust]	4. DEF.	1. V-SHIFT 2. V-SIZE 3. H-CENT 4. H-SIZE 5. TRAPEZ 6. EW-PIN 7. COR-PIN 8. COR-UP 9. COR-LO 10. ANGLE 11. BOW 12. V-S.CR 13. V.LIN
2. V / C	1. RGB BLK 2. WDR R 3. WDR G 4. WDR B 5. BRIGHT 6. CONTRAST 7. COLOUR 8. HUE 9. SHARP 10. VCO ADJUSTMENT 11. VIDEO AGC 12. SYNC SLICE	5. VSM PRESET COOL NORMAL WARM	1. CONT. 2. BRIGHT 3. SHARP 4. COLOUR 5. HUE 6. WDR R 7. WDR G 8. WDR B
3. AUDIO **(Do not adjust)**	1. ERR LIMIT 2. A2 ID THR	6. STATUS **(Do not adjust)**	VPS PDC

USER SETTING VALUES (TABLE 3)

Setting item	Setting value	Setting item	Setting value
SUB POWER	ON	VOLUME	10
SHIPPING CHANNEL	PR1	DISPLAY	INDICATED
PRESET CHANNEL	See OPERATING INSTRUCTIONS.	ZOOM MODE	REGULAR
PICTURE SETTING		**EXT SETTING**	
TINT	COOL	ID	BLANK
CONTRAST	CENTER	DUBBING	EXT-1→EXT-2
BRIGHT	CENTER		
SHARP	CENTER		
COLOUR	CENTER		
ECO MODE	OFF		
PICTURE FEATURES		**FEATURES**	
DIGITAL VNR	AUTO	SLEEP TIMER	OFF
DIGIPURE PRO	AUTO	BLUE BLACK	ON
COLOUR SYSTEM	TV : According to preset CH	CHILD LOCK	ID : No.0000, All CH : OFF
	EXT : AUTO	DECODER (EXT-2)	All CH : OFF
4:3 AUTO ASPECT	PANORAMIC		
SOUND SETTING		**INSTALL**	
BASS	CENTER	LANGUAGE	ENGLISH
TREBLE	CENTER	EDIT	PR CHANNEL ONLY
BALANCE	CENTER		OTHERS : BLANK
TV SPEAKER	L / R		
HYPER SOUND	OFF		
BBE	ON		
DIGITAL SURROUND			
3D PHONIC			
TV SPEAKER	L / C / R		
SUB WOOFER	OFF		
LEVEL	CENTRE		
VOLUME	CENTRE		
DOLBY DIGITAL			
TV SPEAKER	L / C / R		
REAR SPEAKER	ON		
SUB WOOFER	OFF		
TEST TONE	OFF		
LEFT	MAX		
CENTRE	MAX		
RIGHT	MAX		
SURROUND	MAX		
DELAY TIME	0		

INITIAL SETTING VALUE OF SERVICE MENU

1. **Adjustment of the SERVICE MENU is made on the basis of the initial setting values ; however, the new setting values which set the screen in its optimum condition may differ from the initial setting.**
2. **Do not change the initial Setting Values of the Setting (Adjustment) items not listed In "ADJUSTMENT".**

1.IF

SETTING ITEM	INITIAL SETTING VALUE
1.VCO	Proper value by adjustment. See "adjustment of VCO" contents
2.ATT	Do not adjust this item.

2.VIDEO / CHROMA

is adjustment not to required

Colour system / Setting item	Initial setting value			Colour system / Setting item	Initial setting value		
	PAL	SECAM	NTSC		PAL	SECAM	NTSC
1. RGB BLK	——	——	——	7. COLOUR	000	000	000
2. WDR R	000	←	←	8. HUE	——	——	020
3. WDR G	000	←	←	9. SHARP	+007	←	←
4. WDR B	-012	←	←	10. VCO ADJUSTMENT	Automatically optimized after adjustment		
5. BRIGHT	000	←	←	11. VIDEO AGC	000	←	←
6. CONTRAST	000	←	←	12. SYNC SLICE	+007	←	←

3.AUDIO (Do not adjust)

Setting item	Variable range	Initial setting value (Fixed value)
1. ERR LIMIT	00H～FFH	0AH
2. A2 ID THR	00H～FFH	19H

is adjustment not to required

4.DEF

Setting item	INITIAL SETTING VALUE					
	REGULAR		ZOOM		16 : 9	
	100Hz i	60Hz p	100Hz i	60Hz p	100Hz i	120Hz i
1. V- SHIFT	-2	+6	-1	0	0	0
2. V-SIZE	-3	0	0	0	-15	0
3. H-CENT	-21	+6	0	0	0	0
4. H-SIZE	+7	-4	0	0	0	0
5. TRAPEZ	-23	+11	-4	0	0	0
6. EW-PIN	-35	-1	-2	0	0	0
7. COR-PIN	0	0	0	0	0	0
8. COR-UP	+16	+7	+9	0	0	0
9. COR-LO	+6	-1	-1	0	0	0
10. ANGLE	0	0	0	0	0	0
11. BOW	0	0	0	0	0	0
12. V-S.CR	+6	0	0	0	0	0
13. V-LIN	-6	+11	0	0	0	0

5.VSM PRESET

VSM preset mode / Setting item	COOL	NORMAL	WARM
1. CONT.	+16	0	-15
2. BRIGHT	-4	0	-2
3. SHARP	-8	-8	-8
4. COLOUR	+2	0	+1
5. HUE	0	0	0
6. WDR R	-19	0	+5
7. WDR G	-10	0	+1
8. WDR B	0	0	0

SERVICE ADJUSTMENTS

BEFORE STARTING SERVICE ADJUSTMENT

1. **There are 2 ways of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.**
2. **The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.**
3. Make sure that connection is correctly made to AC power source.
4. Turn on the power of the TV and measuring instrument for warming up for at least 30 minutes before starting adjustment.
5. If the receive or input signal is not specified, use the most appropriate signal for adjustment.
6. Never touch parts (such as variable resistors, transformers and condensers) not shown in the adjustment items of this service adjustment.
7. Preparation for adjustment (presetting)
   Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT

USER SETTING MENU

PICTURE MODE (VSM)	NORMAL
TINT, CONTRAST, BRIGHT SHARP, COLOUR	CENTER
SLEEP TIMER	OFF
BALANCE	CENTER
ECO	OFF
ZOOM	REGULAR

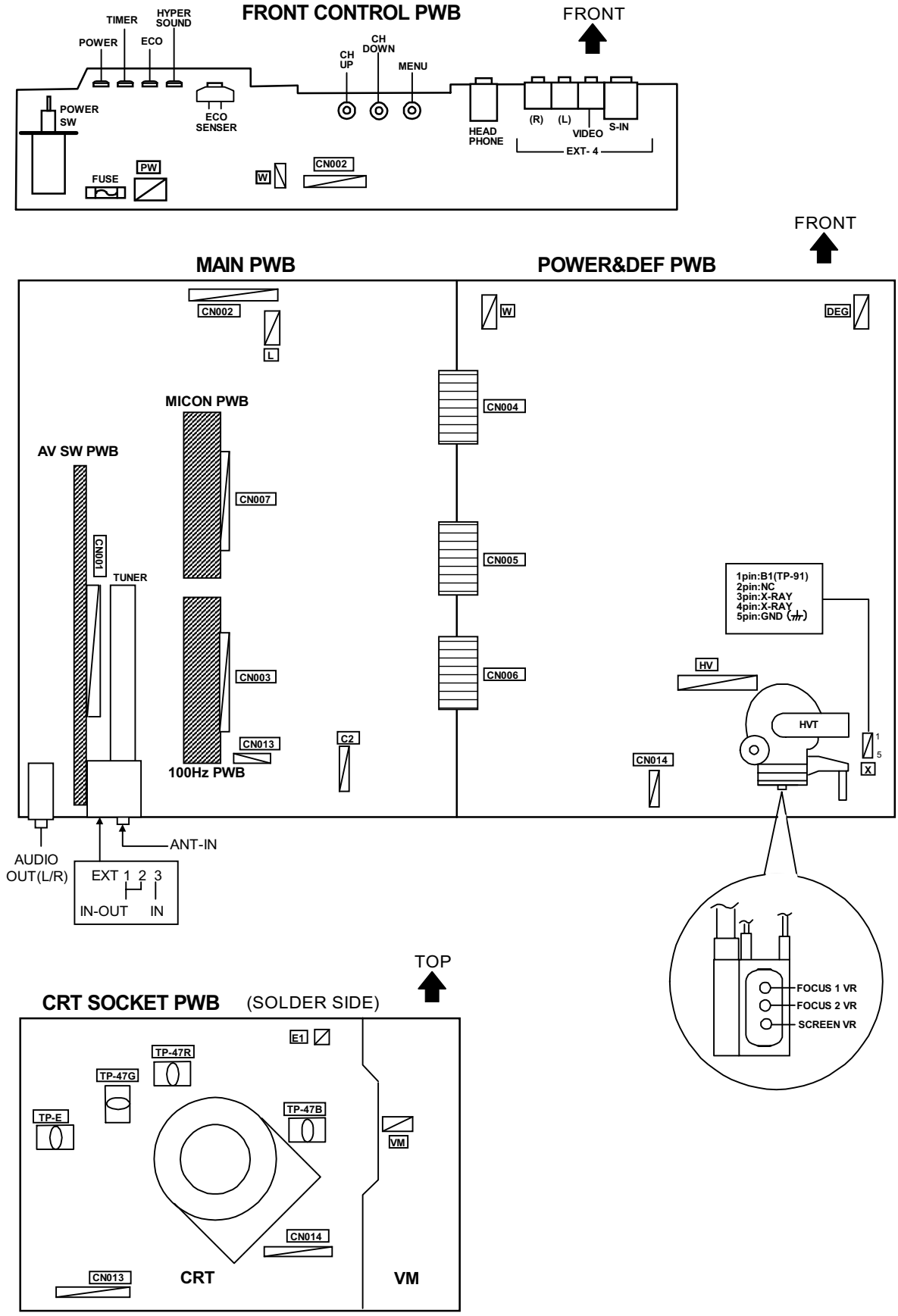
MEASURING INSTRUMENT AND FIXTURES

1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator) [PAL / SECAM / NTSC]
4. Remote control unit

ADJUSTMENT ITEMS

- CHECKING ITEMS.
- ADJUSTMENT OF FOCUS AND SCREEN.
- IF CIRCUIT CHECKING.
- VSM PRESET SETTING.
- VIDEO / CHROMA CIRCUIT ADJUSTMENT.
- DEFLECTION CIRCUIT ADJUSTMENT.
- AUDIO CIRCUIT ADJUSTMENT. (DO NOT ADJUST)

ADJUSTMENT LOCATIONS



BASIC OPERATION SERVICE MENU

1. TOOL OF SERVICE MENU OPERATION

Operate the SERVICE MENU with the REMOTE CONTROL UNIT.

2. SERVICE MENU ITEMS

With the SERVICE MENU, various settings (adjustments) can be made, and they are broadly classified in the following items of settings (adjustments):

(1) **1. IF** ····· This mode adjusts the setting values of the IF circuit.
(2) **2.V/C** ····· This mode adjusts the setting values of the VIDEO / CHROMA circuit.
(3) **3.AUDIO** ····· This mode adjusts the setting values of the multiplicity SOUND circuit.
(4) **4.DEF** ····· This mode adjusts the setting values of the DEFLECTION circuit for each aspect mode given below.

ASPECT MODE	Vertical frequency and Scan mode
REGULAR	100Hz Interlace / 60Hz Progressive
ZOOM	100Hz Interlace / 60Hz Progressive
16 : 9	100Hz Interlace / 60Hz Progressive

(5) **5.VSM PRESET** ····· This mode adjusts the initial setting values of COOL,NOMAL and WARM.
(VSM : Video Status Memory)

3. BASIC OPERATION OF SERVICE MENU

(1) **How to enter SERVICE MENU**

Press the **INFORMATION** key and the **MUTING** key of the REMOTE CONTROL UNIT simultaneously (Fig.2), and the SERVICE MENU screen (Fig. 1) will be displayed.

SERVICE MENU

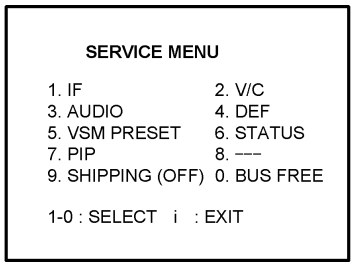


Fig.1

(2) **Selection of SUB MENU SCREEN**

Press one of keys 1～5 of the REMOTE CONTROL UNIT and select the SUB MENU SCREEN (See Fig. 3), form the SERVICE MENU.

SERVICE MENU → SUB MENU

1. IF
2. V / C
3. AUDIO
4. DEF.
5. VSM PRESET
6. STATUS
7. PIP
8. - - -
9. SHIPPING (OFF)
0. BUS FREE

Not to work

REMOTE CONTROL UNIT KEY ASSIGNMENT

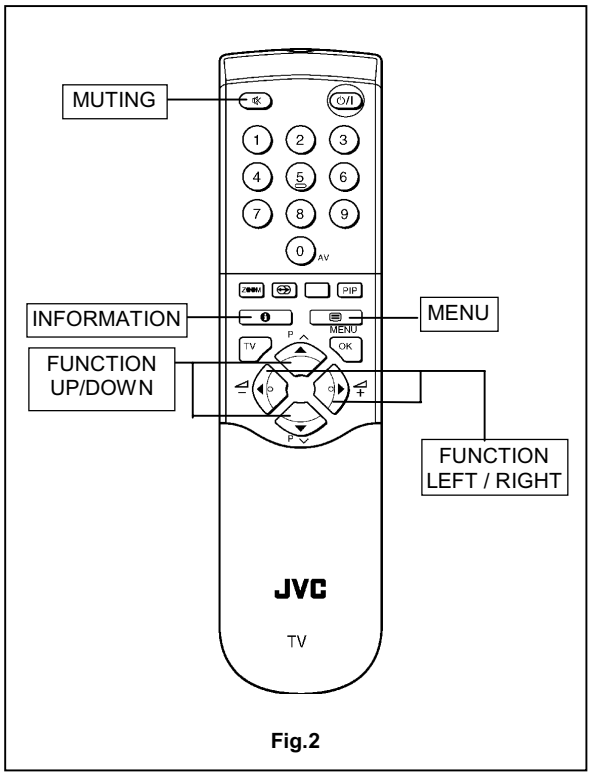


Fig.2

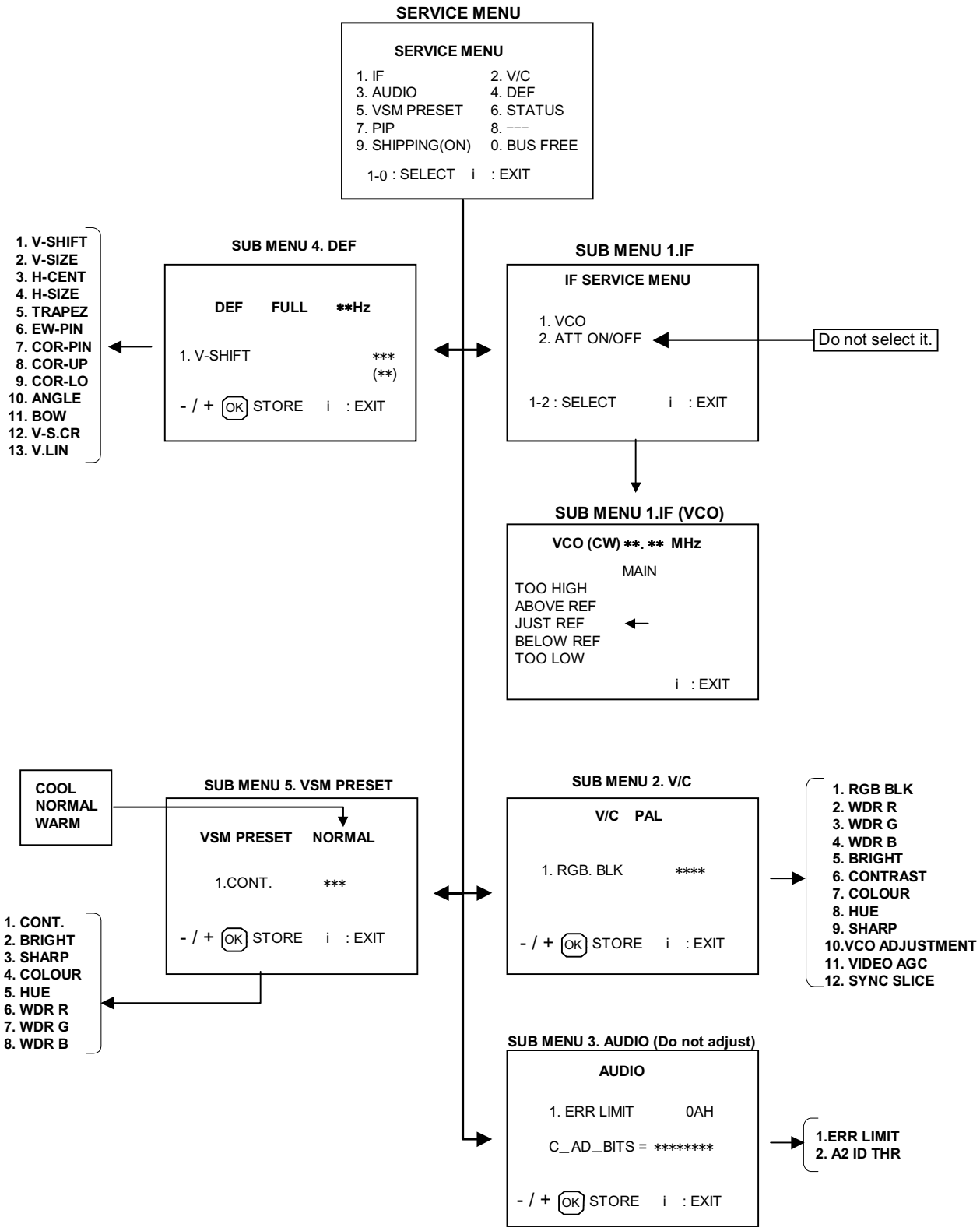


Fig.3 SUB MENU SCREEN

(3) **Setting methods**

● Method of Setting 1.IF as [VCO] : <u>It must not adjust without signal.</u>

① 1 Key····· Select 1.IF.

② 1 Key ····· Select 1. VCO (CW)
Check the arrow position from the “ABOVE REF.” to “BELOW REF.”

③ INFORMATION Key····· Return to the SERVICE MENU screen.

● Method of setting **2.V/C, 3.AUDIO, 4.DEF** and **5.VSM PRESET.**

① 2∼5 Key····· Select one from **2. V/C, 3. AUDIO, 4. DEF** and **5. VSM PRESET**.

② FUNCTION UP/DOWN Key ····· Select setting items.

③ FUNCTION LEFT/RIGHT Key···· Set (adjust) the setting values of the setting items.

④ MENU (OK) Key ····· Memorize the setting value.
(Before storing the setting values in memory, do not press the CH, TV, POWER ON / OFF key - if you do, the values will not be stored in memory.)

⑤ INFORMATION Key····· Return to the **SERVICE MENU** screen.

● Do not adjust **6. STATUS, 7. PIP, 8. --- , 9. SHIPPING(ON)** and **0. BUS FREE** functions**.**

(4) **Release of SERVICE MENU**

1) After completing the adjustment, return to the SERVICE MENU, then again press the INFORMATION (OK) key to return to the normal screen.

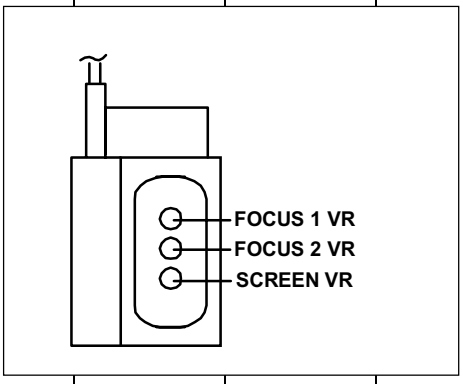
ADJUSTMENT

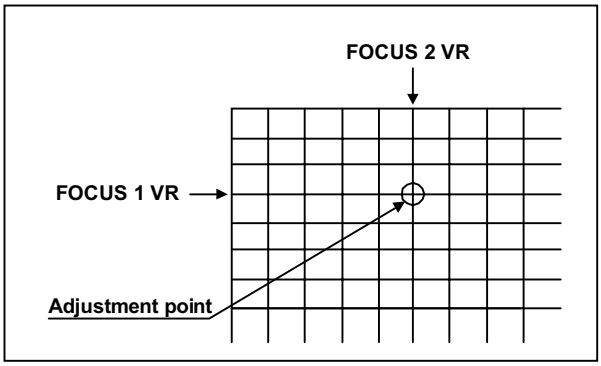
CHECKING ITEM

Item	Measuring instrument	Test point	Adjustment part	Description
Check of B1 Power Supply	**DC voltmeter** **Remote Control unit**	**TP-91(B1)** **TP-E(⏚)** **[X connector on POWER & DEF PWB]**	**1.RGB BLK**	1. Receive any broadcast. 2. Press the ZOOM key and select the REGULAR mode. 3. Select 2. V/C from the SERVICE MENU. 4. Select 1. RGB BLK with FUNCTION UP / DOWN key. 5. Press the FUNCTION RIGHT key to turn on the cutoff screen condition (all black screen). 6. Connect a DC voltmeter to TP-91(B1) and TP-E(⏚). 7. Make sure that the voltage is DC139.9 ±2.0V. 8. Press the FUNCTION LEFT key to return to service menu.
Check of High Voltage	**High voltage meter** **Remote Control unit**	**CRT anode** **Chassis GND**	**1.RGB BLK**	1. Receive any broadcast. 2. Press the ZOOM key and select the REGULAR mode. 3. Select 2. V/C from the SERVICE MENU. 4. Select 1. RGB BLK with FUNCTION UP / DOWN key. 5. Press the FUNCTION RIGHT key to turn on the cutoff screen condition (all black screen). 6. Connect a High voltage meter to CRT ANODE and chassis GND. 7. Make sure that the voltage is DC 31.0kV $^{+1kV}_{-1.5kV}$. 8. Press the FUNCTION LEFT key to return to service menu.

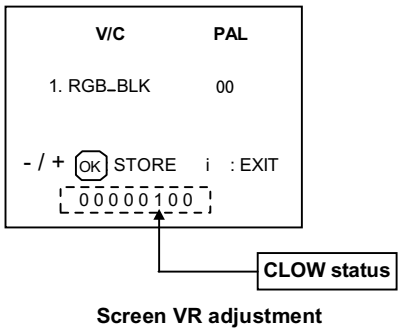
ADJUSTMENT OF FOCUS AND SCREEN

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of FOCUS	**Signal generator**		**FOCUS 1 VR** **FOCUS 2 VR** **[In HVT]**	1. Receive a crosshatch signal. 2. By turning the FOCUS 2 VR, to make the vertical lines as fine and sharp as possible. 3. By turning the FOCUS 2 VR, adjust the picture so that the 6th vertical line from left side of the crosshatch picture becomes thinnest. 4. By turning the FOCUS 1 VR, adjust the 4th horizontal line from the upper side may become uniform at the line center and its periphery. 5. Carry out adjustment by repeating the steps 3 and 4 about. 6. Make sure that when the screen is darkened, the lines remain in good focus.





Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SCREEN VR	**Signal generator** **Remote control unit**		**SCREEN VR (Within FBT)**	1. Input the whole black signal. 2. Press the ZOOM key and select the REGULAR mode. 3. Select 2. V/C from the SERVICE MENU. 4. Turn the SCREEN VR clockwise from the full counterclockwise position, and stop it at the point where “CLOW” status (marked in figure) changes from “1” → “0” → “1” (which is indicated at the 3rd column from the right). 5. Then turn the SCREEN VR to the counterclockwise, and stop where “CLOW” status change “1” → “0”.

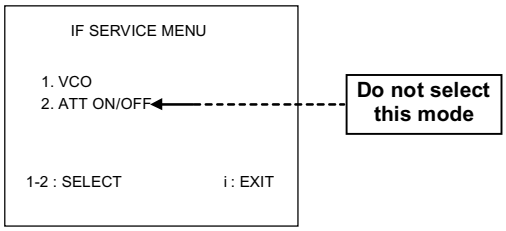


Screen VR adjustment

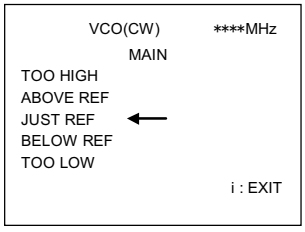
IF CIRCUIT CHECKING

Item	Measuring instrument	Test point	Adjustment part	Description
Checking of VCO	**Remote control unit**		**1.VCO**	● Under normal conditions, no adjustment is required. Confirmation adjustment. 1. Select 1.IF from the SERVICE MENU. 2. Then select 1.VCO from the IF SERVICE MENU. 3. Receive any broadcast. 4. In the VCO adjustment screen, the yellow allows point to the characters. Check the allow position where pointed to the character from “ABOVE REF” to “BELLOW REF”.

IF MENU SCREEN



IF MENU SCREEN



VSM PRESET SETTING

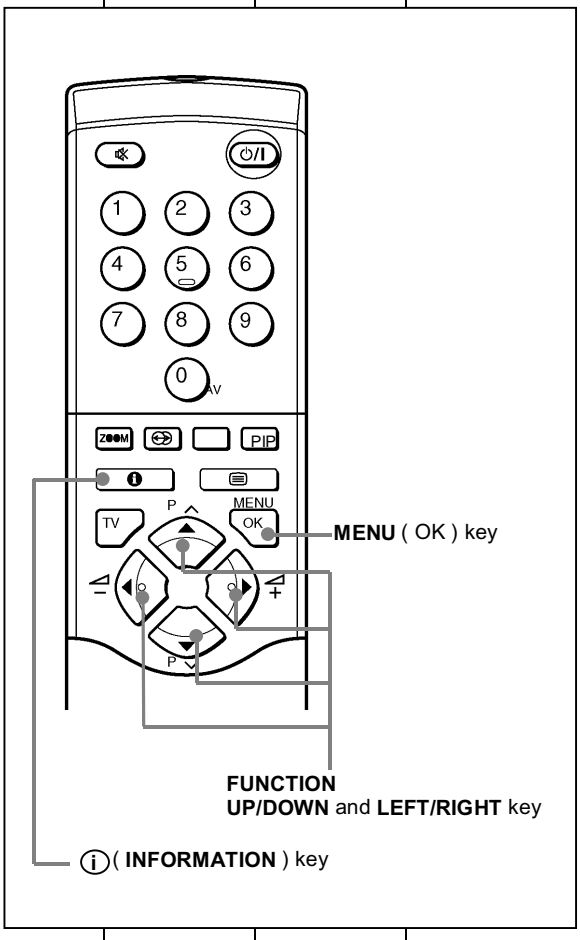
Item	Measuring instrument	Test point	Adjustment part	Description
Setting of VSM PRESET	**Remote control unit**		**1. CONT.** **2. BRIGHT** **3. SHARP** **4. COLOUR** **5. HUE** **6. WDR R** **7. WDR G** **8. WDR B**	1. Press the MENU key and select COOL mode with the remote control unit. 2. Select 5.VSM PRESET from the SERVICE MENU. 3. Adjust the FUNCTION UP/DOWN and LEFT/RIGHT key to bring the set values of 1.CONT ～ 8. WDR B to the values shown in the table. 4. Press the MENU key and memorize the set value. 5. Respectively select the VSM PRESET mode for NORMAL and WARM, and make similar adjustment as in 3 above. 6. Press the MENU key and memorize the set value. ★ Refer to OPERATING INSTRUCTIONS for the PICTURE MODE.

VIDEO/CHROMA CIRCUIT ADJUSTMENT

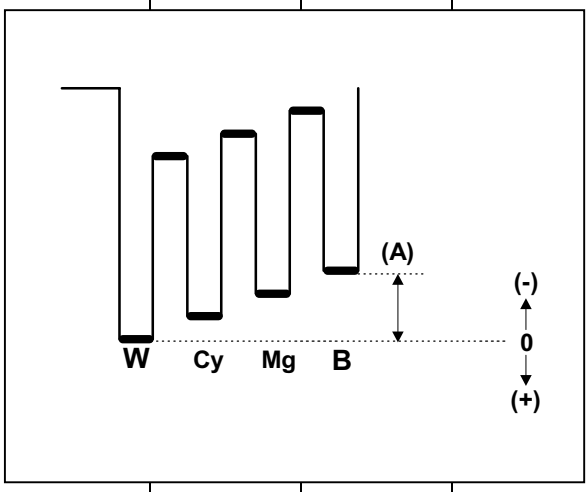
- **The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.**
- **The setting values which adjust the screen to the optimum condition can be different from the initial setting values.**

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (High-Light)	**Signal generator** **Remote control unit**		**2.WDR R** **3.WDR G**	● Set the PICTURE MODE to NORMAL. 1. Receive a black and white signal (colour off). 2. Select 2. V/C from the SERVICE MENU. 3. Modify 2. WDR R and 3.WDR G data to adjust the white balance (high light). 4. Press the MENU key and memorize the set value. 5. Change the contrast and brightness up and down with the remote control unit from Low–light to High–light, and check that the tracking of the white balance is good.
Adjustment of SUB BRIGHT	**Remote control unit**		**5.BRIGHT**	1. Receive any broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 5.BRIGHT with the FUNCTION UP/DOWN key. 4. Set the initial setting value with the FUNCTION LEFT/RIGHT key. 5. If the brightness is not the best with the initial setting value, make fine adjustment until you get the best brightness. 6. Press the MENU key and memorize the set value.
Adjustment of SUB CONTRAST	**Remote control unit**		**6.CONTRAST**	1. Receive any broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 6.CONTRAST with the FUNCTION UP/DOWN key. 4. Set the initial setting value with the FUNCTION LEFT/RIGHT key. 5. If the contrast is not the best with the initial setting value, make fine adjustment until you get the best contrast. 6. Press the MENU key and memorize the set value.

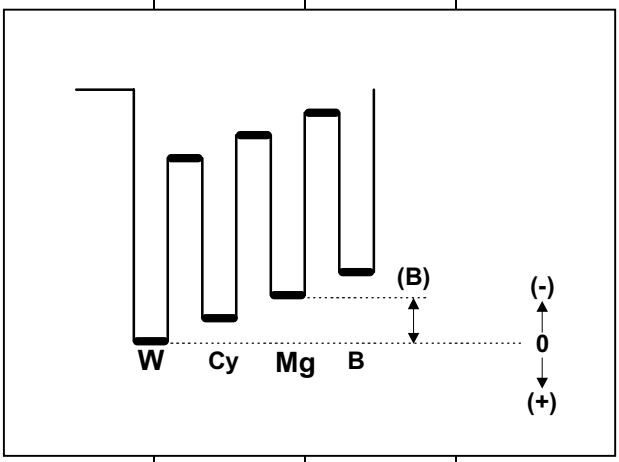
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR I	**Remote control unit**		**7.COLOUR (PAL/SECAM/NTSC)**	**[Method of adjustment without measuring instrument]**
			PAL COLOUR	1. Receive PAL broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 7.COLOUR with the FUNCTION UP/DOWN key. 4. Set the initial setting value for PAL COLOUR with the FUNCTION LEFT/RIGHT key. 5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour. 6. Press the MENU key and memorize the set value.
			SECAM COLOUR	1. Receive a SECAM broadcast. 2. Make fine adjustment of SECAM COLOUR in the same manner as for above.
			NTSC COLOUR	(NTSC 3.58 COLOUR) 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal from the EXT terminal. 2. Make similar fine adjustment of NTSC 3.58 COLOUR in the same manner as for above.
				(NTSC 4.43 COLOUR) 1. Input a NTSC 4.43MHz COMPOSITE VIDEO signal from the EXT terminal. 2. Make similar fine adjustment of 4.43 COLOUR in the same manner as for above.



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR Ⅱ	**Signal generator** **Oscilloscope** **Remote control unit**	**TP-47B** **TP-E(⏚)** **[CRT SOCKET PWB]**	**7.COLOUR (PAL/SECAM/NTSC)**	**[Method of adjustment using measuring instrument]**
			PAL COLOUR	1. Receive a PAL full field colour bar signal (75% white). 2. Select 2.V/C from the SERVICE MENU. 3. Select 7.COLOUR with the FUNCTION UP/DOWN key. 4. Set the initial setting value of PAL COLOUR with the FUNCTION LEFT/RIGHT key. 5. Connect the oscilloscope between TP-47B and TP-E 6. Adjust PAL COLOUR and bring the value of **(A)** in the illustration to **–8V** (voltage difference between white (w) and blue (B)). 7. Press the MENU key and memorize the setting value.
			SECAM COLOUR	1. Receive a SECAM full field colour bar signal (75% white). 2. Set the initial setting value of SECAM COLOUR with the FUNCTION LEFT/RIGHT key. 3. Adjust SECAM COLOUR and bring the value of **(A)** of the illustration to **–6V** (W～B). 4. Press the MENU key and memorize the setting value.
			NTSC COLOUR	(NTSC 3.58 COLOUR) 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Set the initial setting value of NTSC 3.58 COLOUR with the FUNCTION LEFT/RIGHT key. 3. Adjust NTSC 3.58 COLOUR and bring the value of **(A)** of the illustration to **0V** (W～B). 4. Press the MENU key and memorize the setting value. (NTSC 4.43 COLOUR) 1.When NTSC3.58 adjustment has done, then NTSC4.43 adjustment will be automatically set at the respective values.



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB HUE Ⅰ	**Remote control unit**		**8.HUE**	**[Method of adjustment without measuring instrument]**
			NTSC 3.58 HUE	1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Select 2.V/C from the SERVICE MENU. 3. Select 8.HUE with the FUNCTION UP/DOWN key. 4. Set the initial setting value of NTSC 3.58 HUE with the FUNCTION LEFT/RIGHT key. 5. If you cannot get the best hue with the initial setting value, make fine adjustment until you get the best hue. 6. Press the MENU key and memorize the set value.
			NTSC 4.43 HUE	1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
Adjustment of SUB HUE Ⅱ	**Signal generator** **Oscilloscope** **Remote control unit**	**TP-47B TP-E(⏚) [CRT SOCKET PWB]**	**8.HUE**	**[Method of adjustment using measuring instrument]**
			NTSC 3.58 HUE	1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Select 2.V/C from the SERVICE MENU. 3. Select 8.HUE with the FUNCTION UP/DOWN key. 4. Set the initial setting value of NTSC 3.58 HUE with the FUNCTION LEFT/RIGHT key. 5. Connect the oscilloscope between TP-47B and TP-E 6. Adjust NTSC 3.58 HUE to bring the value of **(B)** in the illustration to **–15V** (voltage difference between white (W) and magenta (Mg)). 7. Press the MENU key and memorize the setting value
			NTSC 4.43 HUE	1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.



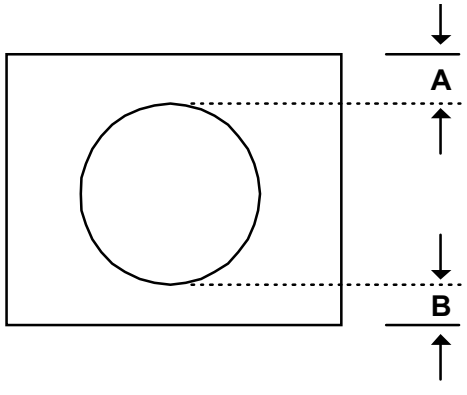
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of VCO for colour decoder	**Signal generator** **Remote control unit**		**10. VCO**	1. Input a PAL full field colour bar signal (75% white) from the EXT terminal. 2. Select 2. V/C from the SERVICE MENU. 3. Select 10. VCO adjustment with the FUNCTION UP/DOWN key. 4. Press the OK key then automatically optimized.

DEFLECTION CIRCUIT ADJUSTMENT

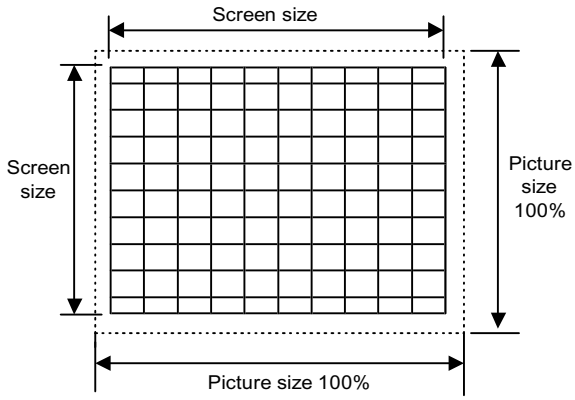
There are 3 aspect modes (①REGULAR, ②ZOOM, ③16 : 9) of the adjustment (1) 100Hz i mode, (2) 60Hz p and (3) 120Hz i mode····· depending upon the kind of signals (vertical frequency 100Hz i / 60HZ p / 120Hz i). Character "i" is an omission of "inter lace scan", and character "p" is an omission of "progressive scan".

- **When the 100Hz REGULAR mode has been established, the setting of other modes will be done automatically. However, if the picture quality has not been optimized, adjust each mode again, respectively.**
- **The adjustment using the remote control unit is made on the basis of the initial setting values.**
- **The setting values which adjust the screen to the optimum condition can be different from the initial setting values.**

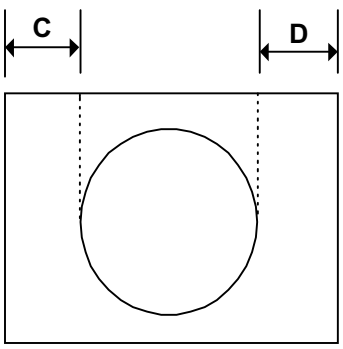
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V-SHIFT	**Signal generator** **Remote control unit**		**1.V- SHIFT**	● Set the ASPECT MODE to REGULAR. 1. Receive a circle pattern signal of vertical frequency 50Hz. 2. Select 4.DEF from the SERVICE MENU. 3. Select 1.V-SHIFT with the FUNCTION UP/DOWN key. 4. Adjust V-SHIFT to become **A = B**. 5. Check the adjustment condition in other zoom mode. If it is a wrong condition, re-adjust in "FULL" mode with 1. V-SHIFT. 6. Press the MENU key and memorize the set value.



<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>Adjustment of V-SIZE</td><td>Signal generator

Remote control unit</td><td></td><td>2.V-SIZE</td><td>7. Receive a crosshatch signal.
8. Select 2.V-SIZE and set the initial setting value.
9. Adjust V-SIZE to the vertical screen size of the picture becomes the value given table bellow.
10. Press the MENU key and memorize the set value.
11. Input a NTSC VIDEO signal (60Hz) from the EXT terminal, and make sure that the vertical screen size has been in the table below.
12. Press the MENU key and memorize the set value.</td></tr>
<tr><td colspan="5"> 

<table>
<tr><th>ASPECT / SCREEN POSITION</th><th>REGULAR</th><th>ZOOM 1</th></tr>
<tr><td>TOP</td><td>92%</td><td>80%</td></tr>
<tr><td>BOTTOM</td><td>92%</td><td>80%</td></tr>
</table>
[VERTICAL SCREEN SIZE]</td></tr>
<tr><td>Adjustment of H. CENTER</td><td>Signal generator

Remote control unit</td><td></td><td>3.H-CENT.</td><td>13. Receive a circle pattern signal.
14. Select 3.H-CENT and set the initial setting value.
15. Adjust H-CENT to become C=D.
16. Press the MENU key and memorize the set value.</td></tr>
<tr><td colspan="5"> 
</td></tr>
</table>

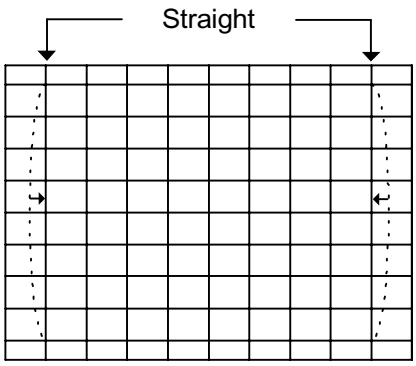
<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>Adjustment of H.SIZE</td><td>Signal generator

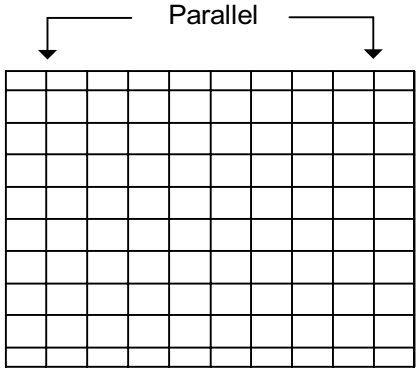
Remote control unit</td><td></td><td>4.H-SIZE</td><td>17. Receive a crosshatch signal.
18. Select 4.H-SIZE and set the initial setting value.
19. Adjust H-SIZE and make sure that the horizontal screen size of the picture is in the table bellow.
20. Press the MENU key and memorize the set value.
21. Input the NTSC VIDEO signal (60Hz) from the EXT terminal, and make sure that the horizontal screen size is in the table bellow.
22. Press the MENU key and memorize the set value.

<table>
<tr><th>ASPECT MODE</th><th>REGULAR</th><th>ZOOM 1</th><th>16 : 9</th></tr>
<tr><td>H SIZE</td><td>92%</td><td>85%</td><td>92%</td></tr>
</table>
[HORIZONTAL SCREEN SIZE]</td></tr>
<tr><td>Adjustment of EW-PIN</td><td>Signal generator

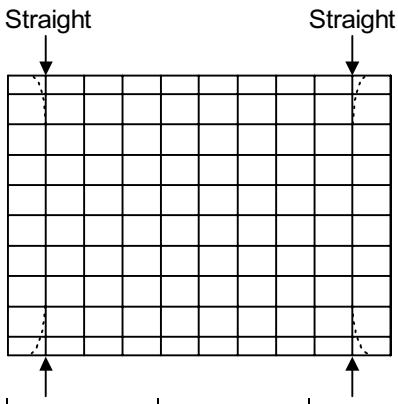
Remote control unit</td><td></td><td>6.EW-PIN</td><td>23. Select 6.EW-PIN and set the initial setting value
24. Adjust EW-PIN and make the 2nd.vertical lines at the left and right edges of the screen straight. Also make sure that the 3rd vertical lines are straight.
25. Press the MENU key and memorize the set value.</td></tr>
<tr><td>Adjustment of TRAPEZ</td><td>Signal generator

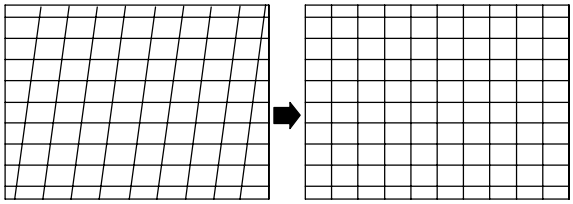
Remote control unit</td><td></td><td>5.TRAPEZ</td><td>26. Receive a crosshatch signal.
27. Select 5.TRAPEZ with the FUNCTION UP/DOWN key.
28. Set the initial setting value of 5.TRAPEZ with the FUNCTION LEFT/RIGHT key.
29. Adjust TRAPEZ and bring the vertical lines at the right and left edges of the screen parallel.
30. Press the MENU key and memorize the set value.</td></tr>
</table>



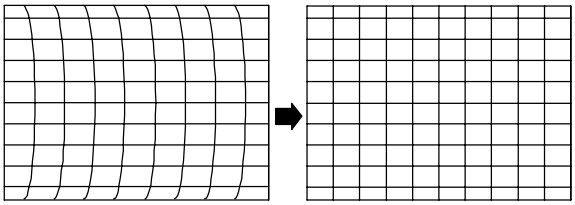


Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of CORNER UP/ LOW	**Signal generator** **Remote control unit**		**7.COR-PIN** **8.COR-UP** **9.COR-LO**	31. Select 9.COR-LO with the FUNCTION UP/DOWN key. 32. Set the initial setting value of COR-LO with the FUNCTION LEFT/RIGHT key. 33. Adjust COR-LO, and bring the lines at the low corner straight. 34. Select 8.COR-UP with the FUNCTION UP/DOWN key. 35. Set the initial setting value of COR-UP with the FUNCTION LEFT/RIGHT key. 36. Adjust COR-UP, and bring the lines at the upper corner straight. 37. If the extreme upper & lower corners have pin or barrel condition a little chose 7.COR-PIN and adjust it to get the straight. 38. Press the MENU key and memorize the set value.
Adjustment of ANGLE	**Signal generator** **Remote control unit**		**10.ANGLE**	● In case which there is a parallelogram distortion of images on the screen. 39. Select 10.ANGLE with the FUNCTION UP/DOWN key. 40. Adjust ANGLE, and bring the vertical lines straight. 41. Press the MENU key and memorize the set value.
Adjustment of BOW	**Signal generator** **Remote control unit**		**11.BOW**	● In case where there is a bow-shaped distortion of images on the screen. 42. Select 11.BOW with the FUNCTION UP/DOWN key. 43. Adjust BOW, and bring the vertical lines straight. 44. Press the MENU key and memorize the set value.



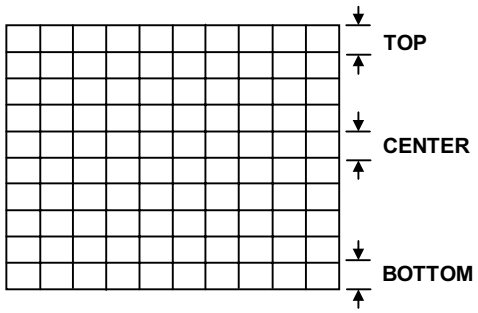


PARALLELOGRAM



BOW

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V-S.CR & V.LINE	**Signal generator** **Remote control unit**		**12.V-S.CR** **13.V.LIN.**	● When the vertical linearity has been deteriorated remarkably, perform the following steps. 45. Receive a crosshatch signal. 46. Select 13. V.LIN with the FUNCTION UP / DOWN key. 47. Set the initial setting value of 13. V.LIN with the FUNCTION LEFT/RIGHT key. 48. Select 12. V-S.CR. with the FUNCTION UP / DOWN key. 49. Set the initial setting value of 12. V-S.CR. with the FUNCTION LEFT/RIGHT key. 50. Adjust 13. V.LIN and 12. V-S.CR. to the spaces of each lines at TOP, CENTER, and BOTTOM become uniform.
				At first the adjustment in 100Hz REGULAR mode should be done, then the data for the other aspect mode is corrected in the respective value at the same time. And confirm the deflection adjustment initial setting value in 120Hz (NTSC EXT mode) REGULAR mode. If the adjustment in 100Hz each aspect mode has been done and stored, the data for the same aspect modes in 120Hz is corrected in the respective value. Only the data for the other aspect mode in 120Hz is corrected for itself.



AUDIO CIRCUIT ADJUSTMENT

Do not adjust **3. AUDIO** adjustment of the SERVICE MENU as it requires no adjustment.
If values had changed by some reason, set the initial setting values in the table given before page.

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

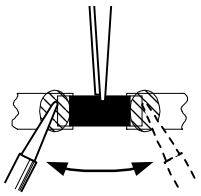
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

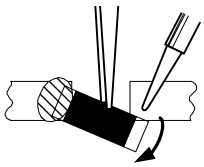
1. How to remove Chip parts

◆ **Resistors, capacitors, etc**

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

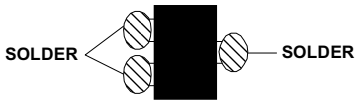


(2) Shift with tweezers and remove the chip part.

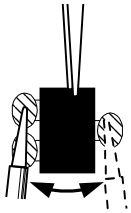


◆ **Transistors, diodes, variable resistors, etc**

(1) Apply extra solder to each lead.



(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

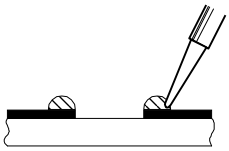


Note : After removing the part, remove remaining solder from the pattern.

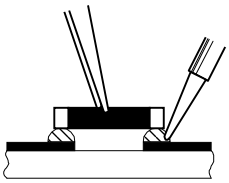
2. How to install Chip parts

◆ **Resistors, capacitors, etc**

(1) Apply solder to the pattern as indicated in the figure.



(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

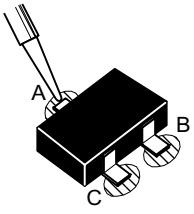


◆ **Transistors, diodes, variable resistors, etc**

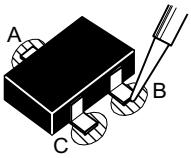
(1) Apply solder to the pattern as indicated in the figure.

(2) Grasp the chip part with tweezers and place it on the solder.

(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines —— in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

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■ **EXPLODED VIEW** ····· **35, 37**
■ **PRINTED WIRING BOARD PARTS LIST**

AV29A10EUS

- MAIN PW BOARD ASS'Y ····· **38**
- POWER & DEF. PW BOARD ASS' Y ····· **40**
- CRT SOCKET PW BOARD ASS'Y ····· **42**
- FRONT CONTROL PW BOARD ASS'Y ····· **43**
- MICON PW BOARD ASS'Y ····· **43**
- AV SW PW BOARD ASS'Y ····· **44**
- 100Hz PW BOARD ASS'Y ····· **45**

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■ **PACKING** ····· **47**
■ **PACKING PARTS LIST** ····· **47**

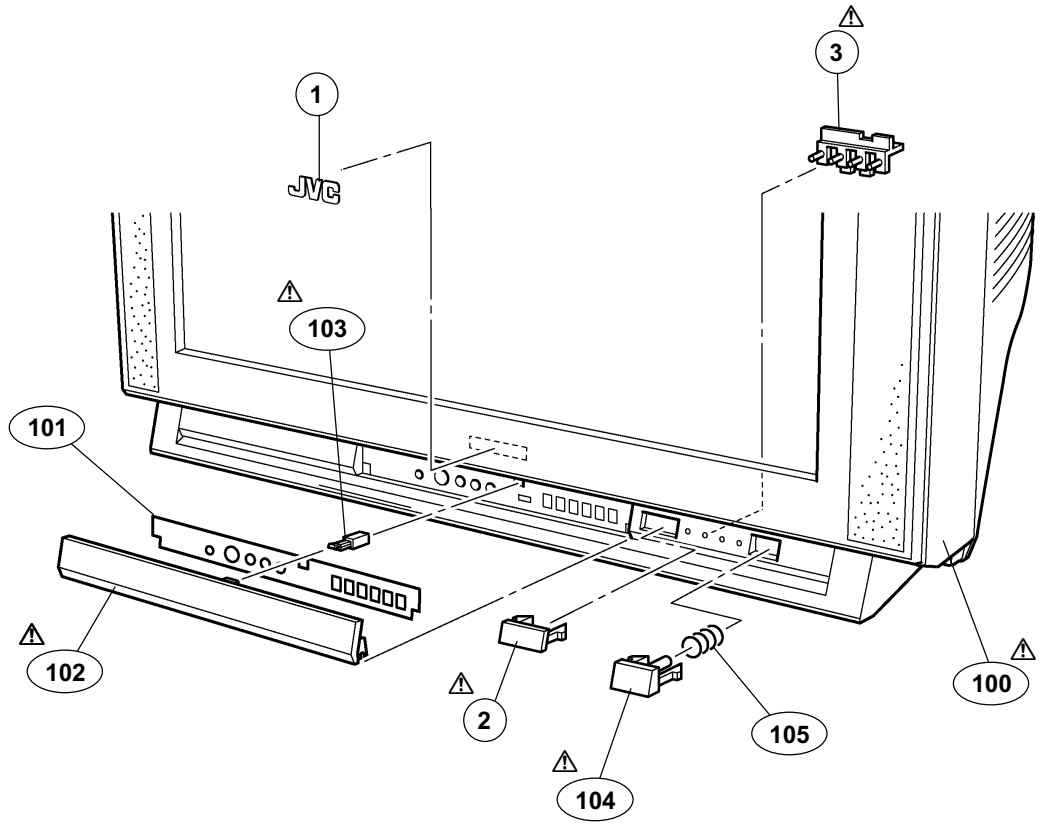
USING PW BOARD & REMOTE CONTROL UNIT

Model / PWB ASS'Y	AV29A10EUS
MAIN PWB	SMF-1010A-U2
POWER & DEF. PWB	SMF-2006A-U2
CRT SOCKET PWB	SMF-3006A-U2
FRONT CONTROL PWB	SMF-8009A-U2
MICON PWB	SMF0M001A-U2
AV SW PWB	SMF0S002A-U2
100Hz PWB	SMF0Z004A-U2
REMOTE CONTROL UNIT	RM-C54-1C

EXPORTED VIEW PARTS LIST (1)

⚠	Ref.No.	Part No.	Part Name	Description
	AV29A10EUS			
	1	CM48125-010	JVC MARK	
⚠	2	LC30303-001A-H	E.E.WINDOW	
⚠	3	LC30304-001A-H	L.E.D.LENS	
⚠	100	LC10272-022A-U	FRONT CABI ASSY	
	101	LC31606-002A-U	CONTROL SHEET	
⚠	102	LC20105-021A-U	CONTROL DOOR	(SERVICE)
⚠	103	QZW0020-001	DOOR LATCH	
⚠	104	LC30302-018A-U	POWER KNOB	(SERVICE)
	105	AEM3149-001-E	SPRING	

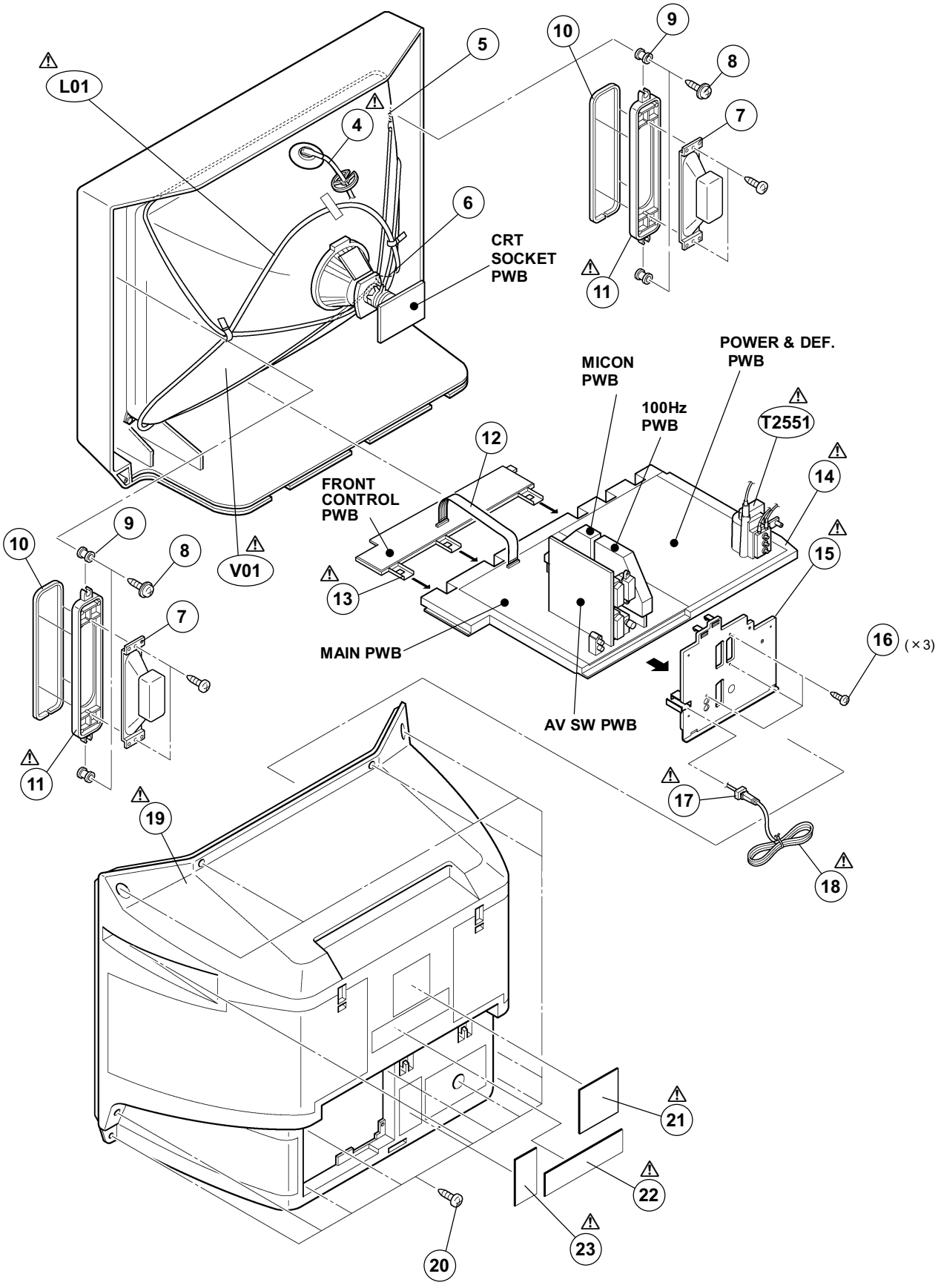
EXPLODED VIEW (1)



EXPLODED VIEW PARTS LIST (2)

⚠	Ref.No.	Part No.	Part Name	Description
AV29A10EUS				
⚠	V01	A68QCP891XA27	CRT	Inc.DY,PC MAGNET,WEDGE
⚠	L01	QQW0044-001	DEG.COIL	
⚠	T2551	QQH0091-003-I2	H.V.TRANSF.	(SERVICE)With ANODE WIRE
⚠	4	QNZ0369-003	ANODE WIRE	
	5	WJY0001-002A	BRAIDED ASSY	
	6	WJY0013-003A	E-BRAIDED ASSY	
	7	QAS0089-001	SPEAKER	(×2)SP01-02
	8	LC40506-001A	TAPPING SCREW	(×4)
	9	AEM4087-001-E	BUSHING	(×4)
	10	LC30599-005A	STICK SHEET	(×2)
⚠	11	LC10843-001B-H	SP HOLDER	(×2)
	12	CHFD125-11BD	FFC WIRE	
⚠	13	LC11127-001A-U	CONTROL BASE	
⚠	14	LC10716-002F-U	CHASSIS BASE	
⚠	15	LC11010-004A-U	AV BOARD	
	16	QYSBSB3012M	TAPPING SCREW	(×3)
⚠	17	CM46618-A01-E	POWER CORD CLAMP	
⚠	18	QMPK160-185-JC	POWER CORD	(CN-PW)
⚠	19	LC10274-008A-U	REAR COVER	
	20	QYSBSAG4016N	TAPPING SCREW	(×14)
⚠	21	LC20433-012A-U	RATING LABEL	
⚠	22	LC20784-003A-U	RATING LABEL	
⚠	23	LC30789-002A-U	WARNING LABEL	

EXPLODED VIEW (2)



AV29A10EUS

PRINTED WIRING BOARD PARTS LIST

■MAIN P.W. BOARD ASS'Y (SMF-1010A-U2)

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R1004-05	NRSA63J-101X	MG R	100Ω 1/16W J
	R1008-09	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1101	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1102	NRSA63J-181X	MG R	180Ω 1/16W J
	R1103	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R1104	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1105	NRSA63J-181X	MG R	180Ω 1/16W J
	R1106	NRSA63J-270X	MG R	27Ω 1/16W J
	R1107	NRSA63J-271X	MG R	270Ω 1/16W J
	R1108	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1109-11	NRSA63J-101X	MG R	100Ω 1/16W J
	R1151	NRSA63J-101X	MG R	100Ω 1/16W J
	R1153	NRSA63J-101X	MG R	100Ω 1/16W J
	R1156	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1158-59	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1161	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1301-02	NRSA63J-101X	MG R	100Ω 1/16W J
	R1303	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1304	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1311	NRSA63J-331X	MG R	330Ω 1/16W J
	R1312	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1313	NRSA63J-183X	MG R	18kΩ 1/16W J
	R1314	NRSA63J-221X	MG R	220Ω 1/16W J
	R1315-17	NRSA63J-101X	MG R	100Ω 1/16W J
	R1318	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1319	NRSA63J-183X	MG R	18kΩ 1/16W J
	R1321-22	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1401-02	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1403-04	NRSA63J-331X	MG R	330Ω 1/16W J
	R1405-06	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1451	NRSA63J-821X	MG R	820Ω 1/16W J
	R1454	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1455-56	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1457	NRSA63J-392X	MG R	3.9kΩ 1/16W J
	R1458	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1459	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1461	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1462	NRSA63J-153X	MG R	15kΩ 1/16W J
	R1463	NRSA63J-683X	MG R	68kΩ 1/16W J
	R1465-66	NRSA63J-224X	MG R	220kΩ 1/16W J
	R1467	NRSA63J-563X	MG R	56kΩ 1/16W J
	R1468	NRSA63J-224X	MG R	220kΩ 1/16W J
	R1469	NRSA63J-683X	MG R	68kΩ 1/16W J
	R1470	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1471	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1472	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R1473	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1474	NRSA63J-563X	MG R	56kΩ 1/16W J
	R1475	NRSA63J-153X	MG R	15kΩ 1/16W J
	R1476-78	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1479	NRSA63J-154X	MG R	150kΩ 1/16W J
	R1480	NRSA63J-823X	MG R	82kΩ 1/16W J
	R1481	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1482	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R1483	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1484	NRSA63J-473X	MG R	47kΩ 1/16W J
	R1485	NRSA63J-123X	MG R	12kΩ 1/16W J
	R1486	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1487	NRSA63J-183X	MG R	18kΩ 1/16W J
	R1489	NRSA63J-333X	MG R	33kΩ 1/16W J
	R1491	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R1492	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1501	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1504	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1511	NRSA63J-152X	MG R	1.5kΩ 1/16W J

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R1512	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R1521	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1522	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1591	NRSA63J-561X	MG R	560Ω 1/16W J
	R1592	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R1601	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1602	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1603	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1604	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1605	NRSA63J-473X	MG R	47kΩ 1/16W J
	R1606	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1609	NRSA63J-104X	MG R	100kΩ 1/16W J
	R1610	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R1618	NRSA63J-333X	MG R	33kΩ 1/16W J
	R1619	NRSA63J-104X	MG R	100kΩ 1/16W J
	R1620	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1637	QRK126J-2R2X	C R	2.2Ω 1/2W J
	R1639	NRSA63J-561X	MG R	560Ω 1/16W J
	R1642-43	NRSA63J-681X	MG R	680Ω 1/16W J
	R1644	NRSA63J-104X	MG R	100kΩ 1/16W J
	R1645-46	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1649	QRK126J-2R2X	C R	2.2Ω 1/2W J
	R1650-51	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1654-55	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1664-65	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1666	NRSA63J-473X	MG R	47kΩ 1/16W J
	R1667	NRSA63J-183X	MG R	18kΩ 1/16W J
	R1668	NRSA63J-473X	MG R	47kΩ 1/16W J
	R1669	NRSA63J-183X	MG R	18kΩ 1/16W J
	R1670-71	NRSA63J-104X	MG R	100kΩ 1/16W J
	R1672	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1673	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1675	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1677-78	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1679	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1680	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1684	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1687	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1701-02	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1703-04	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1705-08	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1711-12	NRSA63J-101X	MG R	100Ω 1/16W J
	R1714-15	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1716-17	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	R1720-22	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1772-76	NRSA63J-221X	MG R	220Ω 1/16W J
	R1951	QRK126J-220X	C R	22Ω 1/2W J
	CAPACITOR			
	C1001	NCB31HK-222X	CHIP CAP.	2200pF 50V K
	C1002	QETN1HM-106Z	E CAP.	10μF 50V M
	C1004	NCB31CK-104X	CHIP CAP.	0.1μF 16V K
	C1005	QETN1CM-108Z	E CAP.	1000μF 16V M
	C1006	NCB31HK-103X	C CAP.	0.01μF 50V K
	C1007	QETN1HM-106Z	E CAP.	10μF 50V M
	C1009	NCB31CK-104X	CHIP CAP.	0.1μF 16V K
	C1010	QETN1HM-106Z	E CAP.	10μF 50V M
	C1101	NCB31CK-104X	CHIP CAP.	0.1μF 16V K
	C1102	QETN1HM-106Z	E CAP.	10μF 50V M
	C1103	NCB31CK-104X	CHIP CAP.	0.1μF 16V K
	C1104	QETN1CM-107Z	E CAP.	100μF 16V M
	C1105	QETN1HM-106Z	E CAP.	10μF 50V M
	C1106-07	NCB31CK-104X	CHIP CAP.	0.1μF 16V K
	C1108	NDC31HJ-680X	C CAP.	68pF 50V J
	C1111	NDC31HJ-820X	C CAP.	82pF 50V J

⚠	Symbol No.	Part No.	Part Name	Description
CAPACITOR				
	C1112-13	NDC31HJ-470X	C CAP.	47pF 50V J
	C1114	NDC31HJ-180X	C CAP.	18pF 50V J
	C1115-16	NCB31HK-472X	C CAP.	4700pF 50V K
	C1117-18	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1119-20	NDC31HJ-2R0X	C CAP.	2.0pF 50V J
	C1121	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1122-23	NDC31HJ-102X	C CAP.	1000pF 50V J
	C1124-25	QETN1HM-106Z	E CAP.	10µF 50V M
	C1126	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1127	QETN1HM-106Z	E CAP.	10µF 50V M
	C1128	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1129	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1130	QETN1HM-106Z	E CAP.	10µF 50V M
	C1151-54	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1155-56	NDC31HJ-102X	C CAP.	1000pF 50V J
	C1301	QETN1CM-107Z	E CAP.	100µF 16V M
	C1302-03	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1305-09	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1310	QETN1AM-228Z	E CAP.	2200µF 10V M
	C1311	NCB31CK-683X	CHIP CAP.	0.068µF 16V K
	C1312	NDC31HJ-221X	C CAP.	220pF 50V J
	C1313-15	NCB31HK-223X	CHIP CAP.	0.022µF 50V K
	C1316-18	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1320	QETN0JM-228Z	E CAP.	2200µF 6.3V M
	C1321-23	NCB31HK-223X	CHIP CAP.	0.022µF 50V K
	C1324	NDC31HJ-820X	C CAP.	82pF 50V J
	C1351	QENC1EM-106Z	BP E CAP.	10µF 25V M
	C1401	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1402	QETN1CM-107Z	E CAP.	100µF 16V M
	C1403-04	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1453	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1454	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C1455-56	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1457	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C1471	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1472	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1473	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1474	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C1475	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1491	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C1501-02	NDC31HJ-150X	C CAP.	15pF 50V J
	C1521	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1564	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1591	NDC31HJ-471X	C CAP.	470pF 50V J
	C1606-07	QETN1CM-227Z	E CAP.	220µF 16V M
	C1616	QETN1HM-105Z	E CAP.	1µF 50V M
	C1618	QETN1HM-105Z	E CAP.	1µF 50V M
	C1628	QETN1HM-107Z	E CAP.	100µF 50V M
	C1629	QETN1HM-106Z	E CAP.	10µF 50V M
	C1630	NCF21HZ-224X	C CAP.	0.22µF 50V Z
	C1632	NCF21HZ-224X	C CAP.	0.22µF 50V Z
	C1634	QETM1HM-228	E CAP.	2200µF 50V M
	C1641-42	NCF21HZ-224X	C CAP.	0.22µF 50V Z
	C1646-47	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1648-49	QETM1VM-108	E CAP.	1000µF 35V M
	C1673-74	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1675	QETN1EM-476Z	E CAP.	47µF 25V M
	C1676-77	NDC31HJ-151X	C CAP.	150pF 50V J
	C1678-79	NDC31HJ-150X	C CAP.	15pF 50V J
	C1680	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1681	NCB31HK-332X	CHIP CAP.	3300pF 50V K
	C1682	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C1683	QETN1EM-476Z	E CAP.	47µF 25V M
	C1684	NCB31HK-332X	CHIP CAP.	3300pF 50V K
	C1685	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C1686	NCF31AZ-105X	C CAP.	1µF 10V Z
	C1687	QETN1HM-106Z	E CAP.	10µF 50V M
	C1688	QETN1EM-476Z	E CAP.	47µF 25V M
	C1689	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1695	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	C1698	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	C1699	NCB31HK-103X	C CAP.	0.01µF 50V K

⚠	Symbol No.	Part No.	Part Name	Description
CAPACITOR				
	C1701	QETN1HM-106Z	E CAP.	10µF 50V M
	C1702	NCB31CK-563X	CHIP CAP.	0.056µF 16V K
	C1951	QETN1CM-477Z	E CAP.	470µF 16V M
	C1952-53	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C1954	QETN1AM-477Z	E CAP.	470µF 10V M
	C1955	QETN1AM-227Z	E CAP.	220µF 10V M
	C1956	QETN1AM-107Z	E CAP.	100µF 10V M
COIL				
	L1001	QQL244K-270Z	PEAKING COIL	
	L1002-03	QQL244K-100Z	COIL	10µH K
	L1004	NQL092K-100X	INDUCTOR	
	L1101	QRN143J-0R0X	C R	0.0Ω 1/4W J
	L1102	QQL244K-4R7Z	COIL	4.7µH K
	L1111	QQL244K-220Z	PEAKING COIL	
	L1112	QQL244K-180Z	COIL	18µH K
	L1301-02	NQL092K-1R5X	INDUCTOR	
	L1951	QQL26AM-5R6Z	CHOKE COIL	
DIODE				
	D1317-18	MA111-X	SI.DIODE	
	D1471-74	MA111-X	SI.DIODE	
	D1521	MA111-X	SI.DIODE	
	D1591	MA111-X	SI.DIODE	
	D1592	MA3051/M/-X	ZENER DIODE	
	D1602	MA111-X	SI.DIODE	
	D1610-11	MA111-X	SI.DIODE	
	D1614-15	MA111-X	SI.DIODE	
	D1617	MA111-X	SI.DIODE	
	D1619-20	MA3330/L/-X	ZENER DIODE	
	D1771-74	MA3056/M/-X	ZENER DIODE	
	D1951	1SR35-400A-T5	SI.DIODE	
	D1981-82	MA111-X	SI.DIODE	
TRANSISTOR				
	Q1101-02	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1471-72	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1601-02	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q1604-05	DTC124EKA-X	DIGI.TRANSISTOR	
	Q1606	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q1607	DTA124EKA-X	DIGI.TRANSISTOR	
	Q1615	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q1616-17	DTC323TK-X	DIGI.TRANSISTOR	
IC				
	IC1101	MSP3415DQGB3GHX	I.C.(MONO-ANA)	
	IC1301	SDA9380	I.C.(M)	
	IC1402	BA10324AF-XE	I.C.(MONO-ANA)	
	IC1471	UPC358G2-XE	I.C.(MONO-ANA)	
	IC1601	TA8246AH	I.C.(HYBRID)	
	IC1662	BA4558F-X	I.C.(MONO-ANA)	
	IC1663	NJM2150AM-X	I.C.(MONO-ANA)	
	IC1701	JLC1562BF-X	I.C.(DIGI-MOS)	
	IC1951	BA09T	I.C.(MONO-ANA)	
	IC1952	BA08T	I.C.(MONO-ANA)	
OTHERS				
	J1001	QNN0296-001	PIN JACK	
	K1001	NQR0389-003X	FERRITE BEADS	
	K1101-02	NQR0389-003X	FERRITE BEADS	
	K1301	NQR0413-003X	BEADS CORE	
	K1601-02	CE42681-001Y	BEADS CORE	
	LC1102	NQR0431-001X	EMI FILTER	
	LC1301-03	NQR0431-001X	EMI FILTER	
	TU1001	QAU0188-003	TUNER	
	X1101	CE42546-001Z	CRYSTAL	
	X1501	QAX0549-001Z	CRYSTAL	
	Y1612-13	NCF21CZ-105X	C CAP.	1µF 16V Z

■ POWER & DEF. P.W. BOARD ASS'Y (SMF-2006A-U2)

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description
	R2401-02	QRE141J-562Y	C R	5.6kΩ 1/4W J
	R2403	QRE141J-222Y	C R	2.2kΩ 1/4W J
	R2404	QRX01GJ-1R0	MF R	1.0Ω 1W J
	R2405	QRL029J-221	OM R	220Ω 2W J
	R2406	QRE141J-222Y	C R	2.2kΩ 1/4W J
	R2407	QRX01GJ-1R0	MF R	1.0Ω 1W J
	R2408	QRX01GJ-1R2	MF R	1.2Ω 1W J
	R2409	QRE141J-823Y	C R	82kΩ 1/4W J
	R2410	QRE141J-103Y	C R	10kΩ 1/4W J
	R2421	QRE141J-103Y	C R	10kΩ 1/4W J
	R2422	QRE141J-684Y	C R	680kΩ 1/4W J
	R2461	QRG029J-820	OM R	82 Ω 2W J
	R2462	QRE141J-473Y	C R	47kΩ 1/4W J
	R2463	QRE141J-682Y	C R	6.8kΩ 1/4W J
	R2464	QRX01GJ-2R2	MF R	2.2Ω 1W J
	R2468	QRE141J-102Y	C R	1kΩ 1/4W J
	R2469	QRE141J-272Y	C R	2.7kΩ 1/4W J
	R2471	QRE141J-391Y	C R	390Ω 1/4W J
	R2472	QRA14CF-1002Y	MF R	10kΩ 1/4W F
	R2473	QRE141J-473Y	C R	47kΩ 1/4W J
	R2474	QRE141J-103Y	C R	10kΩ 1/4W J
	R2475	QRE141J-102Y	C R	1kΩ 1/4W J
	R2476	QRE141J-102Y	C R	1kΩ 1/4W J
	R2477	QRE141J-563Y	C R	56kΩ 1/4W J
	R2478	QRE141J-333Y	C R	33kΩ 1/4W J
	R2501	QRE141J-471Y	C R	470Ω 1/4W J
	R2502	QRE141J-123Y	C R	12kΩ 1/4W J
	R2503	QRE121J-152Y	C R	1.5kΩ 1/2W J
	R2504	QRL039J-472	OM R	4.7kΩ 3W J
	R2505	QRL039J-332	OM R	3.3kΩ 3W J
	R2506	QRE121J-5R6Y	C R	5.6Ω 1/2W J
	R2521	QRE121J-471Y	C R	470Ω 1/2W J
	R2522	QRE141J-223Y	C R	22kΩ 1/4W J
	R2523	QRE141J-103Y	C R	10kΩ 1/4W J
	R2524	QRC121K-152Z	COMP.R	1.5kΩ 1/2W K
	R2541	QRE141J-182Y	C R	1.8kΩ 1/4W J
	R2542	QRE141J-222Y	C R	2.2kΩ 1/4W J
	R2543	QRE121J-272Y	C R	2.7kΩ 1/2W J
⚠	R2551	QRZ9022-R33	F R	0.33Ω 1W K
⚠	R2552	QRZ9022-R33	F R	0.33Ω 1W K
	R2561	QRG01GJ-220	OM R	22Ω 1W J
	R2562	QRE121J-123Y	C R	12kΩ 1/2W J
	R2563	QRZ0056-103Z	COMP R	10kΩ 1/2W K
	R2581	QRF154K-4R7	UNF R	4.7Ω 15W K
	R2582	QRE141J-681Y	C R	680Ω 1/4W J
	R2583	QRE121J-682Y	C R	6.8kΩ 1/2W J
	R2584	QRE141J-183Y	C R	18kΩ 1/4W J
	R2585	QRE141J-222Y	C R	2.2kΩ 1/4W J
	R2586	QRA14CF-7501Y	MF R	7.5kΩ 1/4W F
	R2587	QRA14CF-2491Y	MF R	2.49kΩ 1/4W F
	R2588	QRE141J-103Y	C R	10kΩ 1/4W J
⚠	R2591	QRZ9017-4R7	F R	4.7 Ω 1/4W J
	R2901	QRE121J-331Y	C R	330Ω 1/2W J
	R2902	QRF054K-3R3	UNF R	3.3Ω 5W K
	R2903	QRF104K-3R9	UNF R	3.9Ω 10W K
	R2904	QRL039J-683	OM R	68kΩ 3W J
	R2905-06	QRE121J-474Y	C R	470kΩ 1/2W J
	R2908-09	QRL039J-823	OM R	82kΩ 3W J
⚠	R2910	QRZ9017-2R2	F R	2.2 Ω 1/4W J
	R2911	QRE121J-152Y	C R	1.5kΩ 1/2W J
	R2914	QRM059J-R10	MP R	0.10Ω 5W J
	R2915	QRE121J-681Y	C R	680Ω 1/2W J
	R2916	QRE121J-332Y	C R	3.3kΩ 1/2W J
⚠	R2932	QRZ9017-470	F R	47 Ω 1/4W J
	R2933	QRE121J-272Y	C R	2.7kΩ 1/2W J
	R2934	QRE121J-564Y	C R	560kΩ 1/2W J
	R2935	QRE141J-472Y	C R	4.7kΩ 1/4W J
	R2936	QRX01GJ-3R9	MF R	3.9Ω 1W J
	R2937	QRE121J-681Y	C R	680Ω 1/2W J
	R2941	QRE121J-331Y	C R	330Ω 1/2W J
	R2942	QRE121J-471Y	C R	470Ω 1/2W J

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description
	R2943	QRE141J-103Y	C R	10kΩ 1/4W J
	R2944	QRE141J-103Y	C R	10kΩ 1/4W J
	R2945	QRE141J-563Y	C R	56kΩ 1/4W J
	R2946	QRE141J-103Y	C R	10kΩ 1/4W J
	R2949	QRE141J-101Y	C R	100Ω 1/4W J
	R2950	QRE141J-103Y	C R	10kΩ 1/4W J
	R2951	QRE121J-102Y	C R	1kΩ 1/2W J
	R2952	QRL039J-223	OM R	22kΩ 3W J
	R2953	QRE141J-474Y	C R	470kΩ 1/4W J
	R2954	QRE141J-103Y	C R	10kΩ 1/4W J
	R2960	QRE141J-103Y	C R	10kΩ 1/4W J
	R2981	QRE141J-153Y	C R	15kΩ 1/4W J
	R2982	QRE141J-102Y	C R	1kΩ 1/4W J
⚠	R2991	QRZ0057-825	C R	8.2MΩ 1W J

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description
	C2403	QFLC2AJ-104Z	M CAP.	0.1μF 100V J
	C2404	QCZ0120-104Z	C CAP.	0.1μF 25V Z
	C2405	QDC31HJ-820Z	C CAP.	82pF 50V J
	C2406	QETM1VM-108	E CAP.	1000μF 35V M
	C2408	QETN1VM-107Z	E CAP.	100μF 35V M
	C2409-10	QFV71HJ-474Z	MF CAP.	0.47μF 50V J
	C2411	QFLC2AJ-104Z	M CAP.	0.1μF 100V J
	C2414	QCB31HK-682Z	C CAP.	6800pF 50V K
	C2415	QETN1VM-107Z	E CAP.	100μF 35V M
	C2421	QETN1HM-105Z	E CAP.	1μF 50V M
	C2461	QEZ0414-226	E CAP.	22μF 50V M
	C2462-63	QFM72DJ-152Z	M CAP.	1500pF 200V J
	C2464	QCZ0120-104Z	C CAP.	0.1μF 25V Z
	C2465	QETN1HM-106Z	E CAP.	10μF 50V M
	C2466	QFP31HJ-272Z	PP CAP.	2700pF 50V J
	C2467	QFLC1HJ-102Z	M CAP.	1000pF 50V J
	C2468	QETN1EM-476Z	E CAP.	47μF 25V M
	C2470	QCS31HJ-470Z	C CAP.	47pF 50V J
	C2471	QFLC1HJ-103Z	M CAP.	0.01μF 50V J
	C2501	QCB32HK-331Z	C CAP.	330pF 500V K
	C2502	QFM72DK-103	M CAP.	0.01μF 200V K
	C2503	QFV71HJ-224Z	MF CAP.	0.22μF 50V J
⚠	C2521	QFZ0122-112	MPP CAP.	1100pF1.8kVH±3%
⚠	C2522	QFZ0200-113	MPP CAP.	0.011μF1.5kVH±3%
	C2523	QFM72DK-393	M CAP.	0.039μF 200V K
⚠	C2524	QFP32JJ-183	PP CAP.	0.018μF 630V J
	C2526	QFZ0197-114	MPP CAP.	0.11μF 250V J
	C2527	QFZ0194-154	MPP CAP.	0.15μF 250V J
	C2528	QFZ0197-683	MPP CAP.	0.068μF 250V J
	C2529	QFZ0194-154	MPP CAP.	0.15μF 250V J
	C2530	QCB32HK-561Z	C CAP.	560pF 500V K
	C2531	QFZ0194-534	MPP CAP.	0.53μF 250V J
	C2532	QETM2CM-227	E CAP.	220μF 160V M
	C2541	QENC1HM-105Z	BP E CAP.	1μF 50V M
	C2551	QCB32HK-152Z	C CAP.	1500pF 500V K
	C2552	QETN1CM-108Z	E CAP.	1000μF 16V M
	C2553	QCB32HK-152Z	C CAP.	1500pF 500V K
	C2554	QETN1CM-108Z	E CAP.	1000μF 16V M
	C2555	QCB32HK-102Z	C CAP.	1000pF 500V K
	C2556	QETN2EM-106Z	E CAP.	10μF 250V M
	C2558	QETN1CM-477Z	E CAP.	470μF 16V M
	C2559	QEHR1CM-227Z	E CAP.	220μF 16V M
	C2561	QFLC2AJ-333Z	M CAP.	0.033μF 100V J
	C2581	QETN1CM-107Z	E CAP.	100μF 16V M
	C2582	QETN1EM-476Z	E CAP.	47μF 25V M
	C2583	QETN2AM-106Z	E CAP.	10μF 100V M
	C2584	QETN1AM-227Z	E CAP.	220μF 10V M
⚠	C2901	QFZ9075-473	MPP CAP.	0.047μFAC275V M
⚠	C2902	QFZ9075-104	MPP CAP.	0.1μFAC275V M
⚠	C2903	QFZ9075-473	MPP CAP.	0.047μFAC275V M
	C2904	QCZ9054-472	C CAP.	4700pFAC250V Z
	C2905	QCZ9054-472	C CAP.	4700pFAC250V Z
	C2906	QCZ9054-472	C CAP.	4700pFAC250V Z
	C2907	QEZ0199-227	E CAP.	220μF 400V M
	C2908	QCB32HK-103	C CAP.	0.01μF 500V K
	C2909	QCZ0340-391	C CAP.	390pF 2kV K

⚠	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C2910	QETN1HM-476Z	E CAP.	47µF 50V M
	C2911	QCB31HK-102Z	C CAP.	1000pF 50V K
	C2912	QCZ0340-561	C CAP.	560pF 2kV K
	C2914	QCB31HK-471Z	C CAP.	470pF 50V K
	C2916	QCB32HK-152Z	C CAP.	1500pF 500V K
⚠	C2931	QCZ9054-472	C CAP.	4700pFAC250V Z
⚠	C2932	QCZ9054-472	C CAP.	4700pFAC250V Z
⚠	C2933	QCZ9054-472	C CAP.	4700pFAC250V Z
	C2934	QETM2GM-226	E CAP.	22µF 400V M
	C2936	QCZ0340-151	C CAP.	150pF 2kV K
	C2937	QETN1HM-475Z	E CAP.	4.7µF 50V M
	C2938	QCB31HK-222Z	C CAP.	2200pF 50V K
	C2939	QFLC1HJ-103Z	M CAP.	0.01µF 50V J
	C2940	QCB31HK-471Z	C CAP.	470pF 50V K
	C2941	QETN1AM-108Z	E CAP.	1000µF 10V M
	C2942	QFLC1HJ-102Z	M CAP.	1000pF 50V J
	C2951	QEZ0203-227	E CAP.	220µF 160V M
	C2952	QTMM1EM-228	E CAP.	2200µF 25V M
	C2954	QETM1VM-228	E CAP.	2200µF 35V M
	C2959	QFV71HJ-684Z	MF CAP.	0.68µF 50V J
	C2960	QCZ0131-821	C CAP.	820pF 2kV K
	C2963	QCB32HK-152Z	C CAP.	1500pF 500V K
	C2972	QETN1CM-108Z	E CAP.	1000µF 16V M
	C2974-75	QEZ0256-128	E CAP.	1200µF 10V M
	C2976	QETN1CM-108Z	E CAP.	1000µF 16V M
	C2978-79	QEZ0256-128	E CAP.	1200µF 10V M
⚠	C2991	QCZ9079-222	C CAP.	2200pFAC250V M
⚠	C2993	QCZ9079-471	C CAP.	470pFAC250V K
	TRANSFORMER			
	T2501	QQR1111-001	DRIVE TRANSF.	
⚠	T2551	QQH0091-003-I2	H.V.TRANSF.	(SERVICE)With ANODE WIRE
	T2561	QQR1096-001	DEF.TRANSF.	
⚠	T2901	QQS0115-001	SWITCH.TRANSF.	
⚠	T2931	QQS0101-001	SWITCH.TRANSF.	
	COIL			
	L2461	QQR1195-001	CHOKE COIL	
	L2462	QQLZ028-272	CHOKE COIL	
	L2521	QQLZ031-180	CHOKE COIL	
	COIL			
	L2522	QQR1191-002	LINEARITY COIL	
	L2551	QQLZ026-240	HEATER CHOKE	
	L2552	QQL26AK-220Z	COIL	22µH K
	L2561	QQLZ028-272	CHOKE COIL	
	L2901-02	QQL401K-100Z	CHOKE COIL	
	L2903	QQR1200-001	CHOKE COIL	
	L2951	QQLZ026-460	HEATER CHOKE	
	L2954-55	QQR1129-001	CHOKE COIL	
	L2957	QQLZ026-460	HEATER CHOKE	
	L2958	QQLZ026-460	HEATER CHOKE	
	L2959-60	QQL26AK-220Z	COIL	22µH K
	DIODE			
	D2402-03	1SR35-400A-T2	SI.DIODE	
	D2421	1SS133-T2	SI.DIODE	
	D2461	EU2-T3	SI.DIODE	
	D2462	1SS133-T2	SI.DIODE	
	D2463	1SS133-T2	SI.DIODE	
	D2501	1SS81-T5	SI.DIODE	
	D2521	V11CA-C1	SI.DIODE	
	D2522	FMV-3FU-F1	SI.DIODE	
	D2523	MTZJ22B-T2	ZENER DIODE	
	D2541	EU2-T3	SI.DIODE	
	D2542	MTZJ3.9B-T2	ZENER DIODE	
	D2551	EU2-T3	SI.DIODE	
	D2552	EU2-T3	SI.DIODE	
	D2553	RH1S-T3	SI.DIODE	
	D2582	MTZJ7.5B-T2	ZENER DIODE	
	D2583	MTZJ7.5S-T2	ZENER DIODE	

⚠	Symbol No.	Part No.	Part Name	Description
	DIODE			
⚠	D2584	EU2-T3	SI.DIODE	
	D2901	D3SB60	BRIDGE DIODE	
	D2902	RG1C-LFA1	SI.DIODE	
	D2904	AU01Z-T2	SI.DIODE	
	D2905	AU01Z-T2	SI.DIODE	
	D2906	MTZJ27B-T2	ZENER DIODE	
	D2907	1SS133-T2	SI.DIODE	
	D2908	1SS133-T2	SI.DIODE	
	D2910	MTZJ15B-T2	ZENER DIODE	
	D2912	MTZJ27B-T2	ZENER DIODE	
⚠	D2931	S1WB/A/60-4101	SI.DIODE	
	D2933	AU01Z-T2	SI.DIODE	
	D2934	AU01Z-T2	SI.DIODE	
	D2935	1SS133-T2	SI.DIODE	
	D2941	RGP10J-5025-T3	SI.DIODE	
	D2943	MTZJ7.5B-T2	ZENER DIODE	
	D2944	NJM431L-T	I.C.(MONO-ANA)	
	D2945	1SS133-T2	SI.DIODE	
	D2951	RU4B-F1	SI.DIODE	
	D2952	FMX-G12S	SI.DIODE	
	D2953	RU4B-F1	SI.DIODE	
	D2954	FMX-G12S	SI.DIODE	
	D2958	MTZJ33B-T2	ZENER DIODE	
	D2959-60	RK34-LFC4	SI.DIODE	
	D2961	1SR35-400A-T2	SI.DIODE	
	D2981	1SS133-T2	SI.DIODE	
	D2984	1SS133-T2	SI.DIODE	
	D2985	1SS133-T2	SI.DIODE	
	TRANSISTOR			
	Q2421	DTC124ESA-T	DIGI.TRANSISTOR	
	Q2422	2SC1740S/QR/-T	SI.TRANSISTOR	
	Q2461	2SK2459N-F54	F.E.T.	
	Q2462-63	2SC1740S/QR/-T	SI.TRANSISTOR	
	Q2464	2SA933AS/QR/-T	SI.TRANSISTOR	
	Q2501	BSN304-T	F.E.T.	
⚠	Q2521	2SC5552-RL	SI.TRANSISTOR	H.OUT
	Q2581	2SA1208/ST/Z1-T	SI.TRANSISTOR	
	Q2582	DTC144ESA-T	DIGI.TRANSISTOR	
	Q2583	2SC1740S/QR/-T	SI.TRANSISTOR	
	Q2941-42	2SC1740S/QR/-T	SI.TRANSISTOR	
	IC			
	IC2401	LA7876NZ	I.C.(MONO-ANA)	
	IC2461	BA10393	I.C.(MONO-ANA)	
	IC2551	BA12T	I.C.(MONO-ANA)	
	IC2901	STR-F6667B/F7	I.C.(HYBRID)	
	IC2931	STR-L472/F7	I.C.(HYBRID)	
	IC2951	SE140N	I.C.(HYBRID)	
	IC2954	SI-8050S	I.C.(HYBRID)	
	IC2955	SI-8033S/F1	I.C.(HYBRID)	
	OTHERS			
	CN2004-06	QGB1506M1-16	CONNECTOR	
⚠	CP2931	QMFZ043-2R0Z-J1	FUSE	2.0A
⚠	CP2941	ICP-N25-Y	I.C.PROTECT	
⚠	CP2954	ICP-N75-Y	I.C.PROTECT	
⚠	TH2901	QAD0120-9R0	P.THERMISTOR	
⚠	RY2931	QSK0099-001	RELAY	
⚠	LF2901	QQR1095-001	LINE FILTER	
	K2401	QQR0621-002Z	BEADS CORE	
	K2522-24	CE41832-001	LEAD CORE	
	K2901	QQR0679-001	FERRITE BEADS	
	K2952	QQR0621-002Z	BEADS CORE	
	K2953	QQR0621-002Z	BEADS CORE	
	K2954	QQR0621-002Z	BEADS CORE	
⚠	PC2901	PC123FY2	I.C.(PH.COUPLER)	
⚠	PC2931	PC123FY2	I.C.(PH.COUPLER)	

■ CRT SOCKET P.W. BOARD ASS'Y (SMF-3006A-U2)

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description
	R3101	NRSA63J-223X	MG R	22kΩ 1/16W J
	R3102	NRSA63J-681X	MG R	680Ω 1/16W J
	R3103	NRSA63J-101X	MG R	100Ω 1/16W J
	R3104	NRSA63J-822X	MG R	8.2kΩ 1/16W J
	R3105	NRSA63J-102X	MG R	1kΩ 1/16W J
	R3106	NRSA63J-221X	MG R	220Ω 1/16W J
	R3107	NRSA63J-561X	MG R	560Ω 1/16W J
	R3109	NRSA63J-153X	MG R	15kΩ 1/16W J
	R3110	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R3111	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R3112	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R3113	NRSA63J-331X	MG R	330Ω 1/16W J
	R3114	NRSA63J-152X	MG R	1.5kΩ 1/16W J
	R3115	NRSA63J-820X	MG R	82Ω 1/16W J
	R3116	QRG01GJ-101	OM R	100Ω 1W J
	R3117	NRSA63J-221X	MG R	220Ω 1/16W J
	R3122	NRSA63J-122X	MG R	1.2kΩ 1/16W J
	R3123	QRE121J-563Y	C R	56kΩ 1/2W J
	R3124	NRSA63J-470X	MG R	47Ω 1/16W J
	R3125	QRE121J-563Y	C R	56kΩ 1/2W J
	R3126	NRSA63J-470X	MG R	47Ω 1/16W J
	R3127	NRSA63J-122X	MG R	1.2kΩ 1/16W J
	R3128	NRSA63J-390X	MG R	39Ω 1/16W J
	R3129-30	QRE121J-2R7Y	C R	2.7Ω 1/2W J
	R3131	NRSA63J-390X	MG R	39Ω 1/16W J
	R3132	NRSA63J-121X	MG R	120Ω 1/16W J
	R3133	QRL029J-391	OM R	390Ω 2W J
⚠	R3134	QRZ9021-561	F R	560 Ω 1W J
	R3204-06	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R3211	NRSA63J-154X	MG R	150kΩ 1/16W J
	R3223-25	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R3227	NRSA63J-103X	MG R	10kΩ 1/16W J
	R3228	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R3229-31	QRL029J-104	OM R	100kΩ 2W J
	R3232-34	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R3235-37	QRC121K-152Z	COMP.R	1.5kΩ 1/2W K
	R3239	QRZ0107-474Z	C R	470kΩ 1/2W K
	R3241	QRZ0107-105Z	C R	1.0MΩ 1/2W K
	R3242	NRSA63J-103X	MG R	10kΩ 1/16W J
	R3244	NRSA63J-102X	MG R	1kΩ 1/16W J
	R3245-47	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R3301-02	QRE121J-474Y	C R	470kΩ 1/2W J
	R3303-04	NRSA63J-223X	MG R	22kΩ 1/16W J
	R3305	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R3306	NRSA63J-392X	MG R	3.9kΩ 1/16W J
	R3310	NRSA63J-0R0X	MG R	0.0Ω 1/16W J

CAPACITOR

	C3102	NDC31HJ-8R0X	C CAP.	8.0pF 50V J
	C3103	NDC31HJ-151X	C CAP.	150pF 50V J
	C3104	QCB31HK-103Z	C CAP.	0.01μF 50V K
	C3106	QETN1HM-335Z	E CAP.	3.3μF 50V M
	C3107	QETN1CM-107Z	E CAP.	100μF 16V M
	C3110	QETN2CM-106Z	E CAP.	10μF 160V M
	C3111	QCB32HK-472Z	C CAP.	4700pF 500V K
	C3113	QETN2CM-106Z	E CAP.	10μF 160V M
	C3114	QCB32HK-472Z	C CAP.	4700pF 500V K
	C3116-17	QETN1AM-107Z	E CAP.	100μF 10V M
	C3118	QETN1AM-337Z	E CAP.	330μF 10V M
	C3120-21	NDC31HJ-221X	C CAP.	220pF 50V J
	C3201-03	NDC31HJ-8R0X	C CAP.	8.0pF 50V J
	C3204-06	NCF31CZ-104X	C CAP.	0.1μF 16V Z
	C3207-09	QETN1EM-476Z	E CAP.	47μF 25V M
	C3210-12	QFK62EK-104Z	MM CAP.	0.1μF 250V K
	C3213-15	NDC31HJ-181X	C CAP.	180pF 50V J
	C3216	QETN1CM-107Z	E CAP.	100μF 16V M
	C3218	QETM2EM-336	E CAP.	33μF 250V M
	C3219	QFZ0097-223	MM CAP.	0.022μF 1250V K
	C3221	QETN2EM-106Z	E CAP.	10μF 250V M
	C3302	QETN1AM-477Z	E CAP.	470μF 10V M

COIL

⚠	Symbol No.	Part No.	Part Name	Description
	L3101	QQL244K-5R6Z	COIL	5.6μH K
	L3204	QQL26AJ-102Z	COIL	1mH J

DIODE

	D3101-02	MA111-X	SI.DIODE
	D3103	RH1S-T3	SI.DIODE
	D3104	RH1S-T3	SI.DIODE
	D3204-06	EU01N-T2	SI.DIODE
	D3208-10	1SR124-400A-T2	SI.DIODE
	D3211	MA3062/M/-X	ZENER DIODE
	D3301	MA111-X	SI.DIODE
	D3303	MA111-X	SI.DIODE

TRANSISTOR

	Q3101	2SC2412K/QR/-X	SI.TRANSISTOR
	Q3102	2SA1037AK/QR/-X	SI.TRANSISTOR
	Q3103	2SC1906-T	SI.TRANSISTOR
	Q3104	2SC2412K/QR/-X	SI.TRANSISTOR
	Q3105	2SC1627A/OY/-T	SI.TRANSISTOR
	Q3108	2SA1837	SI.TRANSISTOR
	Q3109	2SC4793	SI.TRANSISTOR
	Q3301	2SA1037AK/QR/-X	SI.TRANSISTOR

IC

	IC3201-03	TDA6111Q	I.C.(MONO-ANA)

OTHERS

	K3101	CE41492-001Z	CHOKE COIL
	K3103-04	CE41492-001Z	CHOKE COIL
	K3105	QQR0621-002Z	BEADS CORE
	SG3201-03	QAF0056-501Z	VARISTOR
⚠	SK3001	QNZ0380-001	C.R.T.SOCKET

■ FRONT CONTROL P.W. BOARD ASS'Y (SMF-8009A-U2)

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R8001-02	QRE121J-271Y	C R	270Ω 1/2W J
	R8003	NRSA63J-102X	MG R	1kΩ 1/16W J
	R8004	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R8005	NRSA63J-221X	MG R	220Ω 1/16W J
	R8006	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R8008	NRSA63J-102X	MG R	1kΩ 1/16W J
	R8010	NRSA63J-103X	MG R	10kΩ 1/16W J
	R8012-13	NRSA63J-103X	MG R	10kΩ 1/16W J
	R8020	NRSA63J-822X	MG R	8.2kΩ 1/16W J
	R8021-22	NRSA63J-102X	MG R	1kΩ 1/16W J
	R8035	QRE121J-151Y	C R	150Ω 1/2W J
	R8036-37	NRSA63J-561X	MG R	560Ω 1/16W J
	R8038	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R8039	NRSA63J-331X	MG R	330Ω 1/16W J
	CAPACITOR			
	C8001-02	NCB31HK-103X	C CAP.	0.01µF 50V K
	C8003	QETN1HM-106Z	E CAP.	10µF 50V M
	C8004	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C8005	NDC31HJ-680X	C CAP.	68pF 50V J
	C8010-11	NCB31HK-472X	C CAP.	4700pF 50V K
	C8019	QETN1CM-107Z	E CAP.	100µF 16V M
	C8021	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C8022	QETN1EM-476Z	E CAP.	47µF 25V M
⚠	C8901	QFZ9040-474	MF CAP.	0.47µFAC275V M
	COIL			
	L8001	QQR0716-001Z	LEAD CORE	
	L8002-03	QQL244K-5R6Z	COIL	5.6µH K
	L8010-11	QQL244K-270Z	PEAKING COIL	
	L8012	QQR0716-001Z	LEAD CORE	
	DIODE			
	D8007	P1241-04	C.D.S.	
	D8008	MA111-X	SI.DIODE	
	D8009	SLR-342MG-T16	L.E.D.(GRN)	
	D8010	SPR-39MVWF	L.E.D.	
	D8011	MA111-X	SI.DIODE	
	D8012	SLR-342DU-T16	L.E.D.(ORG)	
	D8013	SLR-342YY-T16	L.E.D.(YLW)	
	D8014	MA3068/M/-X	ZENER DIODE	
	D8018	MA3033-X	ZENER DIODE	
	TRANSISTOR			
	Q8001	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q8002	DTC124EKA-X	DIGI.TRANSISTOR	
	Q8003-04	DTA124EKA-X	DIGI.TRANSISTOR	
	Q8005-07	DTC124EKA-X	DIGI.TRANSISTOR	
	IC			
	IC8001	GP1U281Q	IFR DETECT UNIT	
	OTHERS			
⚠		CEMG002-001Z	FUSE CLIP	
		LC30596-001B-C	L.E.D.HOLDER	
		CM35921-005-H	CDS HOLDER	
⚠	F8901	QMF51D2-3R15J1	FUSE	3.15A
	LC8002	NQR0169-001X	EMI FILTER	
⚠	LF8901	QQR1095-001	LINE FILTER	
	J8001	QMS3004-C01	HEADPHONE JACK	
	J8003	QNZ0453-001	JACK	
	S8001	QSW0619-003Z	PUSH SWITCH	MENU
	S8002	QSW0619-003Z	PUSH SWITCH	CH DOWN
	S8003	QSW0619-003Z	PUSH SWITCH	CH UP
⚠	S8901	QSW0824-001	PUSH SWITCH	MAIN POWER

■ MICON P.W. BOARD ASS'Y (SMF0M001A-U2)

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R0001	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0002	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0003-05	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0006	NRSA63J-152X	MG R	1.5kΩ 1/16W J
	R0007-08	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0009-11	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0012	NRSA63J-273X	MG R	27kΩ 1/16W J
	R0013	NRSA63J-221X	MG R	220Ω 1/16W J
	R0014	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0015	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0016-17	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0018-21	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0022	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0024	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0027	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0030	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0032	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0034-53	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0055	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0057-77	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0081	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	R0087	NRSA63J-221X	MG R	220Ω 1/16W J
	R0089-91	NRSA63J-221X	MG R	220Ω 1/16W J
	R0092	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0093	NRSA63J-221X	MG R	220Ω 1/16W J
	R0094	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0095	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0096	NRSA63J-221X	MG R	220Ω 1/16W J
	R0097	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0098	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0099	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0100-02	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0103-06	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0107	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0110	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0111	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0112	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0113-14	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0119	NRSA63J-563X	MG R	56kΩ 1/16W J
	R0120	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0121	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R0122	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0123	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R0124	NRSA63J-101X	MG R	100Ω 1/16W J
	R0125-28	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0129	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0130	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0131	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0133	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0135	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0136	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0137-39	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0144	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0147	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0151	NRSA63J-183X	MG R	18kΩ 1/16W J
	R0152-54	NRSA63J-221X	MG R	220Ω 1/16W J
	R0155-56	NRSA63J-101X	MG R	100Ω 1/16W J
	R0157	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0158	NRSA63J-221X	MG R	220Ω 1/16W J
	R0161	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0162	NRSA63J-153X	MG R	15kΩ 1/16W J
	R0163	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R0165	QRE141J-103Y	C R	10kΩ 1/4W J
	CAPACITOR			
	C0001	QETN0JM-477Z	E CAP.	470µF 6.3V M
	C0002	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0003	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0004	QETN0JM-108Z	E CAP.	1000µF 6.3V M
	C0005-06	NCB11CK-225X	CHIP CAP.	2.2µF 16V K

⚠	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C0007	NEH71CM-476X	E CAP.	47µF 16V M
	C0008	NCB11CK-225X	CHIP CAP.	2.2µF 16V K
	C0012-13	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0014	NCB31HK-682X	CHIP CAP.	6800pF 50V K
	C0017	NDC31HJ-150X	C CAP.	15pF 50V J
	C0019	NEH71CM-476X	E CAP.	47µF 16V M
	C0020	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0021	NEH71CM-476X	E CAP.	47µF 16V M
	C0022	NCF31AZ-105X	C CAP.	1µF 10V Z
	C0023	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C0024	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0027-28	NEH71CM-476X	E CAP.	47µF 16V M
	C0029	NDC31HJ-151X	C CAP.	150pF 50V J
	C0030-32	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0034-39	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0040	NDC31HJ-330X	C CAP.	33pF 50V J
	C0041	NDC31HJ-270X	C CAP.	27pF 50V J
	C0042-43	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0045-47	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0048	NEH71CM-476X	E CAP.	47µF 16V M
	C0049-50	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0051	NEH71CM-476X	E CAP.	47µF 16V M
	C0052-57	NCF31CZ-104X	C CAP.	0.1µF 16V Z
	C0059-61	NEH71CM-106X	E CAP.	10µF 16V M
	C0062	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	C0063-65	NDC31HJ-820X	C CAP.	82pF 50V J
	C0070	NEH71HM-225X	E CAP.	2.2µF 50V M
	COIL			
	L0001	NQL092K-4R7X	INDUCTOR	
	L0003	NQL092K-4R7X	INDUCTOR	
	L0005-08	NQL092K-4R7X	INDUCTOR	
	L0009	NQL034K-4R7X	INDUCTOR	
	L0010-14	NQL092K-4R7X	INDUCTOR	
	L0015-16	NQL034K-4R7X	INDUCTOR	
	L0017-22	NQL092K-1R5X	INDUCTOR	
	DIODE			
	D0001-02	MA111-X	SI.DIODE	
	D0003	MA3068/M/-X	ZENER DIODE	
	D0004	MA3027-X	ZENER DIODE	
	D0005-08	MA3056/M/-X	ZENER DIODE	
	D0010	MA3068/M/-X	ZENER DIODE	
	TRANSISTOR			
	Q0001-02	2SC2712/YG/-X	SI.TRANSISTOR	
	Q0007-08	2SA1162/YG/-X	SI.TRANSISTOR	
	Q0009-12	2SC2712/YG/-X	SI.TRANSISTOR	
	IC			
	IC0001	SDA6000	I.C.(M)	
	IC0002	MR27V1652D60RAZ	IC	
	IC0003	K4S1616222D-TC80	I.C.(D-RAM)	
	IC0004	AT24C3229A10EU	I.C.	(SERVICE)
	IC0005	S-80828ANNP-W	I.C.(MONO-ANA)	
	IC0012	MX29L1611TC-10	I.C.(M)	
	IC0901	TA48M025F-X	I.C.(M)	
	IC0902	TA48M033F-X	I.C.(M)	
	IC0903	MM1437AF-X	I.C.(MONO-ANA)	
	OTHERS			
	CN0001	QGB1505K1-50	CONNECTOR	
	LC0001	NQR0313-007X	EMI FILTER	
	LC0002	NQR0431-001X	EMI FILTER	
	K0001	NRSA63J-390X	MG R	39Ω 1/16W J
	K0002	NQR0389-003X	FERRITE BEADS	
	K0003	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	K0004	NQR0389-003X	FERRITE BEADS	
	K0005	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	X0001	QAX0669-001Z	CRYSTAL	

■AV SW P.W. BOARD ASS'Y (SMF0S002A-U2)

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R0101-09	NRSA63J-750X	MG R	75Ω 1/16W J
	R0110-11	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0112-13	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0114	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0115	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0116	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0117	NRSA63J-223X	MG R	22kΩ 1/16W J
	R0118	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0119	NRSA63J-153X	MG R	15kΩ 1/16W J
	R0120	NRSA63J-273X	MG R	27kΩ 1/16W J
	R0121	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0122	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0123	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0124	NRSA63J-153X	MG R	15kΩ 1/16W J
	R0125	NRSA63J-223X	MG R	22kΩ 1/16W J
	R0126	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0127	NRSA63J-273X	MG R	27kΩ 1/16W J
	R0128-29	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0130-31	NRSA63J-391X	MG R	390Ω 1/16W J
	R0132	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0133	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0134	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0135	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0136	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0137	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0138-39	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0140	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0141	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0142	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0143-44	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0145	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0146	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0147	NRSA63J-223X	MG R	22kΩ 1/16W J
	R0148-49	NRSA63J-391X	MG R	390Ω 1/16W J
	R0150-51	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0152-67	NRSA63J-101X	MG R	100Ω 1/16W J
	R0168	NRSA63J-750X	MG R	75Ω 1/16W J
	R0169	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0170	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0171	NRSA63J-750X	MG R	75Ω 1/16W J
	R0172	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0173	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0174	NRSA63J-750X	MG R	75Ω 1/16W J
	R0175	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0176	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0177	NRSA63J-823X	MG R	82kΩ 1/16W J
	R0178	NRSA63J-153X	MG R	15kΩ 1/16W J
	R0179	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0180	NRSA63J-273X	MG R	27kΩ 1/16W J
	R0181-82	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R0183-84	NRSA63J-102X	MG R	1kΩ 1/16W J
	R0185-90	NRSA63J-101X	MG R	100Ω 1/16W J
	R0191	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0192	NRSA63J-101X	MG R	100Ω 1/16W J
	R0194-95	NRSA63J-221X	MG R	220Ω 1/16W J
	R0196	QRG01GJ-101	OM R	100Ω 1W J
	R0197	QRK126J-181X	C R	180Ω 1/2W J
	R0198	NRSA63J-750X	MG R	75Ω 1/16W J
	R0199	NRSA63J-101X	MG R	100Ω 1/16W J
	R0200	NRSA63J-750X	MG R	75Ω 1/16W J
	R0201	QRK126J-151X	C R	150Ω 1/2W J
	R0203-05	NRSA63J-750X	MG R	75Ω 1/16W J
	CAPACITOR			
	C0101-10	NCB31HK-472X	C CAP.	4700pF 50V K
	C0111-12	QETN1CM-477Z	E CAP.	470µF 16V M
	C0113-14	NCB31HK-102X	C CAP.	1000pF 50V K
	C0115-17	QETN1HM-106Z	E CAP.	10µF 50V M
	C0118-19	QETN1HM-105Z	E CAP.	1µF 50V M
	C0120	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0121	QETN1HM-105Z	E CAP.	1µF 50V M

⚠	Symbol No.	Part No.	Part Name	Description
CAPACITOR				
	C0122	QETN1HM-106Z	E CAP.	10µF 50V M
	C0123	QETN1HM-105Z	E CAP.	1µF 50V M
	C0124	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0125	NCB31HK-102X	C CAP.	1000pF 50V K
	C0126-28	QETN1HM-106Z	E CAP.	10µF 50V M
	C0129	QETN1HM-105Z	E CAP.	1µF 50V M
	C0130	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0131	QETN1HM-105Z	E CAP.	1µF 50V M
	C0132	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0133	QETN1HM-106Z	E CAP.	10µF 50V M
	C0134	QETN1HM-105Z	E CAP.	1µF 50V M
	C0135	QETN1HM-106Z	E CAP.	10µF 50V M
	C0136	QETN1HM-105Z	E CAP.	1µF 50V M
	C0137	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0138-39	QENC1HM-105Z	BP E CAP.	1µF 50V M
	C0140	QENC1EM-106Z	BP E CAP.	10µF 25V M
	C0141-47	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0148	QETN1HM-106Z	E CAP.	10µF 50V M
	C0149	QENC1EM-106Z	BP E CAP.	10µF 25V M
	C0150-51	QETN1CM-107Z	E CAP.	100µF 16V M
	C0152	QETN1CM-477Z	E CAP.	470µF 16V M
	C0153	NCB31HK-103X	C CAP.	0.01µF 50V K
	C0154	QETN1CM-107Z	E CAP.	100µF 16V M
	C0155	NDC31HJ-150X	C CAP.	15pF 50V J
COIL				
	L0101	QQR0716-001Z	LEAD CORE	
DIODE				
	D0101-04	MA3056/M/-X	ZENER DIODE	
	D0109-13	MA3120/M/-X	ZENER DIODE	
	D0114	MA3039/H/-X	ZENER DIODE	
	D0115-17	MA3056/M/-X	ZENER DIODE	
TRANSISTOR				
	Q0101-02	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0103-05	DTC323TK-X	DIGI.TRANSISTOR	
	Q0106-09	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0110	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0111	DTC323TK-X	DIGI.TRANSISTOR	
	Q0112	2SA1037AK/QR/-X	SI.TRANSISTOR	
	Q0113-15	2SC2412K/QR/-X	SI.TRANSISTOR	
	Q0116	2SA933AS/QR/-T	SI.TRANSISTOR	
	Q0117	2SC1740S/QR/-T	SI.TRANSISTOR	
IC				
	IC0101	CXA2069Q	I.C.(MONO-ANA)	
OTHERS				
	CN0001	QGB1505K1-50	CONNECTOR	
	J0001	QNZ0465-001	PIN CONNECTOR	
	J0002	QNZ0463-001	PIN CONNECTOR	
	K0101-04	CE42681-001Y	BEADS CORE	

■100Hz P.W. BOARD ASS'Y (SMF0Z004A-U2)

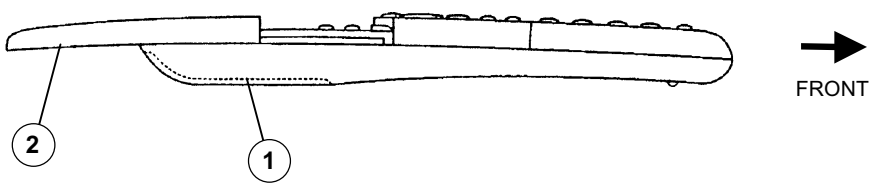
⚠	Symbol No.	Part No.	Part Name	Description
RESISTOR				
	R0001-06	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0008-09	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0010-12	NRSA63J-101X	MG R	100Ω 1/16W J
	R0101	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0102-03	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0104	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R0105-06	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0107-13	NRSA63J-750X	MG R	75Ω 1/16W J
	R0122-23	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0124-25	NRSA63J-101X	MG R	100Ω 1/16W J
	R0132-39	NRSA63J-100X	MG R	10Ω 1/16W J
	R0141	NRSA63J-100X	MG R	10Ω 1/16W J
	R0201	NRSA63J-121X	MG R	120Ω 1/16W J
	R0202-03	NRSA63J-101X	MG R	100Ω 1/16W J
	R0204-05	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0214	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0217	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0218	NRSA63J-333X	MG R	33kΩ 1/16W J
	R0219	NRSA63J-103X	MG R	10kΩ 1/16W J
	R0220	NRSA63J-822X	MG R	8.2kΩ 1/16W J
	R0223	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0225	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0251	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0252	NRSA63J-750X	MG R	75Ω 1/16W J
	R0254	NRSA63J-391X	MG R	390Ω 1/16W J
	R0255-56	NRSA63J-221X	MG R	220Ω 1/16W J
	R0257	NRSA63J-271X	MG R	270Ω 1/16W J
	R0258	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R0259	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0261	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0264	NRSA63J-391X	MG R	390Ω 1/16W J
	R0271	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R0274	NRSA63J-391X	MG R	390Ω 1/16W J
	R0301-03	NRSA63J-104X	MG R	100kΩ 1/16W J
	R0304-05	NRSA63J-101X	MG R	100Ω 1/16W J
	R0306-08	NRSA63J-152X	MG R	1.5kΩ 1/16W J
	R0401	NRSA63J-473X	MG R	47kΩ 1/16W J
	R0402	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R0404	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0407	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R0409	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
CAPACITOR				
	C0001	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0002	NEH71CM-476X	E CAP.	47µF 16V M
	C0003	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0004	NEH71CM-476X	E CAP.	47µF 16V M
	C0005	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0006	NEH71CM-476X	E CAP.	47µF 16V M
	C0007-09	NDC31HJ-4R0X	C CAP.	4.0pF 50V J
	C0101	NEH71CM-106X	E CAP.	10µF 16V M
	C0102	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C0103	NEH71CM-476X	E CAP.	47µF 16V M
	C0104	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0105	NDC31HJ-102X	C CAP.	1000pF 50V J
	C0106	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0107	NCF31CZ-224X	C CAP.	0.22µF 16V Z
	C0108	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0109	NDC31HJ-391X	C CAP.	390pF 50V J
	C0110	NEH71CM-106X	E CAP.	10µF 16V M
	C0111	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C0112	NDC31HJ-331X	C CAP.	330pF 50V J
	C0113-18	NCF31CZ-224X	C CAP.	0.22µF 16V Z
	C0119-24	NDC31HJ-331X	C CAP.	330pF 50V J
	C0125-26	NDC31HJ-3R0X	C CAP.	3.0pF 50V J
	C0128	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
	C0129	NCF31CZ-224X	C CAP.	0.22µF 16V Z
	C0130	NDC31HJ-391X	C CAP.	390pF 50V J
	C0131	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C0132	NCB31EK-473X	CHIP CAP.	0.047µF 25V K

⚠ Symbol No.	Part No.	Part Name	Description
CAPACITOR			
C0133	NCB31HK-152X	CHIP CAP.	1500pF 50V K
C0134	NCB31CK-683X	CHIP CAP.	0.068µF 16V K
C0136-37	NCB31CK-683X	CHIP CAP.	0.068µF 16V K
C0138	NCB31HK-152X	CHIP CAP.	1500pF 50V K
C0139	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
C0140	NEH71CM-476X	E CAP.	47µF 16V M
C0141	QCS31HJ-100Z	C CAP.	10pF 50V J
C0185-86	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
C0201	NEH71CM-476X	E CAP.	47µF 16V M
C0202-05	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
C0206	NEH71CM-476X	E CAP.	47µF 16V M
C0207-11	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
C0212-13	NDC31HJ-180X	C CAP.	18pF 50V J
C0214-17	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
C0218	NDC31HJ-561X	C CAP.	560pF 50V J
C0219	NEH71CM-476X	E CAP.	47µF 16V M
C0220-35	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
C0237-38	NEH71CM-106X	E CAP.	10µF 16V M
C0239-42	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
C0251	NDC31HJ-4R0X	C CAP.	4.0pF 50V J
C0252-53	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
C0254	NDC31HJ-120X	C CAP.	12pF 50V J
C0255	NDC31HJ-270X	C CAP.	27pF 50V J
C0256	NEH71CM-106X	E CAP.	10µF 16V M
C0261	NDC31HJ-4R0X	C CAP.	4.0pF 50V J
C0262-63	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
C0264	NDC31HJ-120X	C CAP.	12pF 50V J
C0265	NDC31HJ-270X	C CAP.	27pF 50V J
C0271	NDC31HJ-4R0X	C CAP.	4.0pF 50V J
C0272-73	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
C0274	NDC31HJ-120X	C CAP.	12pF 50V J
C0275	NDC31HJ-270X	C CAP.	27pF 50V J
C0301	NEH71CM-476X	E CAP.	47µF 16V M
C0302-03	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
C0402-03	NCB31CK-104X	CHIP CAP.	0.1µF 16V K
C0404	NDC31HJ-330X	C CAP.	33pF 50V J
COIL			
L0001-03	NQL092K-1R5X	INDUCTOR	
L0101	NQL034K-150X	INDUCTOR	

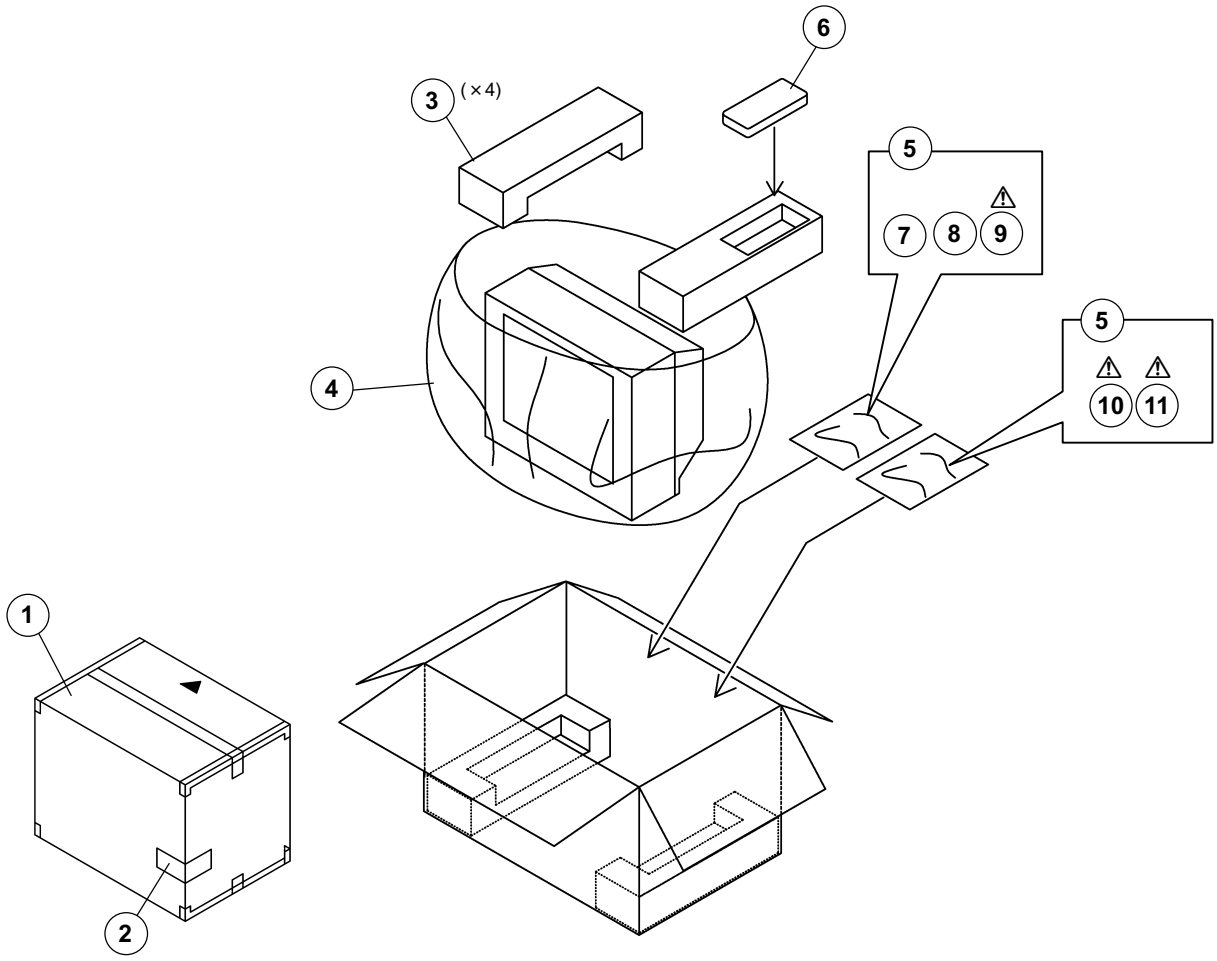
⚠ Symbol No.	Part No.	Part Name	Description
COIL			
L0102-08	NQL092K-3R3X	INDUCTOR	
L0109	NQL034K-6R8X	INDUCTOR	
L0201-03	NQL034K-100X	INDUCTOR	
L0204	QQL244K-4R7Z	COIL	4.7µH K
L0205-08	NQL034K-100X	INDUCTOR	
L0209-10	NQL092K-1R5X	INDUCTOR	
L0251	NQL092K-5R6X	INDUCTOR	
L0261	NQL092K-5R6X	INDUCTOR	
L0271	NQL092K-5R6X	INDUCTOR	
DIODE			
D0401	MA111-X	SI.DIODE	
TRANSISTOR			
Q0101-02	2SA1037AK/QR/-X	SI.TRANSISTOR	
Q0201	2SA1037AK/QR/-X	SI.TRANSISTOR	
Q0251-52	2SA1037AK/QR/-X	SI.TRANSISTOR	
Q0253	2SC2412K/QR/-X	SI.TRANSISTOR	
Q0261	2SA1037AK/QR/-X	SI.TRANSISTOR	
Q0271	2SA1037AK/QR/-X	SI.TRANSISTOR	
Q0301-03	2SC2412K/QR/-X	SI.TRANSISTOR	
IC			
IC0101	VPC3230D-QA-B3	I.C.(M)	
IC0201	SAA4979H/V1	I.C.(MONO-ANA)	
IC0202	OM4994H	I.C.(M)	
IC0203	SAA4955HL/V1	I.C.(MONO-ANA)	
IC0301	TDA9178T/N1-X	I.C.(MONO-ANA)	
IC0401	S-80828ANNP-W	I.C.(MONO-ANA)	
IC0402	TC7WH34FU-X	I.C.(DIGI-MOS)	
OTHERS			
CN0003	QGB1505K1-50	CONNECTOR	
LC0010-12	NQR0313-009X	EMI FILTER	
LC0013	NQR0313-004X	EMI FILTER	
LC0014-15	NQR0313-007X	EMI FILTER	
X0101	QAX0655-001Z	CRYSTAL	
X0201	QAX0273-001Z	CRYSTAL	

REMOTE CONTROL UNIT PART LIST (RM-C54-1C)

⚠ Ref.No.	Part No.	Part Name	Description
1	2AA030733	BATTERY COVER	
2	2AA030732	SLIDE COVER	



PACKING



PACKING PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description
		AV29A10EUS		
	1	AEM1002-075-E	PACKING CASE	
	2	AEM1052-066-E	EURO LABEL	
	3	LC11126-002A-U	CUSHION ASSY	4pcs in 1set
	4	AEM1047-A02-E	POLY BAG	
	5	AEM3021-002-E	POLY BAG	(×2)
	6	RM-C54-1C	REMOCON UNIT	
	7	BT-54013-1E	WARRANTY CARD	
	8	AEM1050-001-E	X-RAY CARD	
⚠	9	LCT0984-001A-U	INST BOOK	
⚠	10	LCT0985-001A-U	INST BOOK	
⚠	11	LCT0986-001A-U	INST BOOK	

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SERVICE MANUAL

COLOUR TELEVISION

AV29A10EUS

BASIC CHASSIS
MF

Supplementary

We have changed the production country for some parts. As a result, some parts numbers have been changed. Therefore, this service manual describes only these parts number.
For others, please use the service manual for AV29A10EUS (No.51818, Sept. 2001) .

■ DIFFERENCE LIST

● USING PW BOARD (Page 34)

Model / PWB ASS'Y	AV29A10EUS		Description
	Previous	New	
MAIN PWB	SMF-1010A-U2	←	Not change
POWER & DEF. PWB	SMF-2006A-U2	SMF-2006A-H3	Interchangeable
CRT SOCKET PWB	SMF-3006A-U2	SMF-3006A-H3	↑
FRONT CONTROL PWB	SMF-8009A-U2	SMF-8009A-H3	↑
MICOM PWB	SMF0M001A-U2	←	Not change
AV SW PWB	SMF0S002A-U2	SMF0S002A-H3	Interchangeable
100Hz PWB	SMF0Z004A-U2	←	Not change

Note:
The number of PWB have been changed because the production country of some PWBs has been changed. However, there is no change in component parts.

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No.51818B
Oct. 2002

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HOME AV NETWORK BUSINESS UNIT 12, 3-chome, Moriya-cho, Kanagawa-ku, Yokohama, Kanagawa-prefecture, 221-8528, Japan

AV29A10EUS-U #3
VP 0109
DP3051

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SCHEMATIC DIAGRAMS

COLOUR TELEVISION

AV29A10EUS

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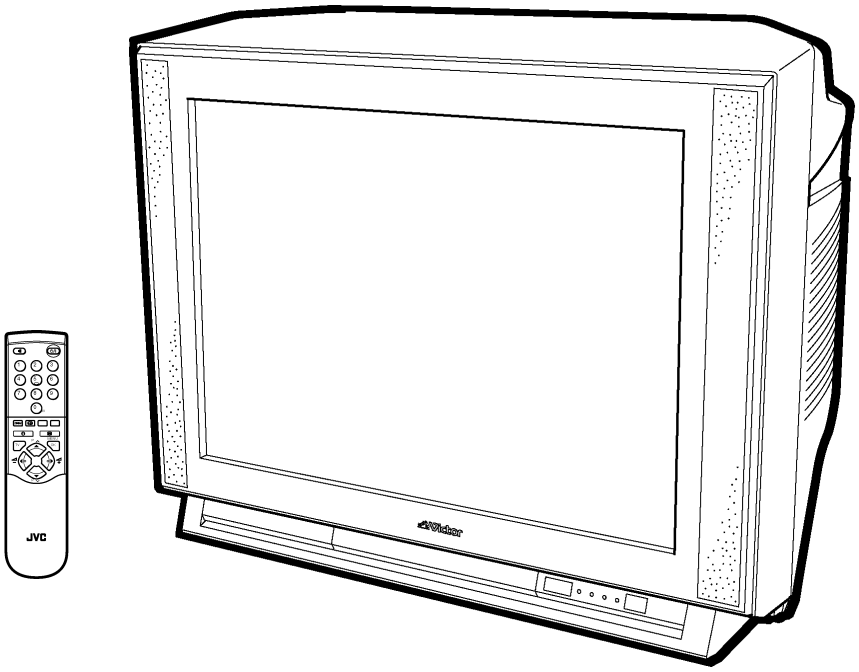
CD-ROM No.SML200109



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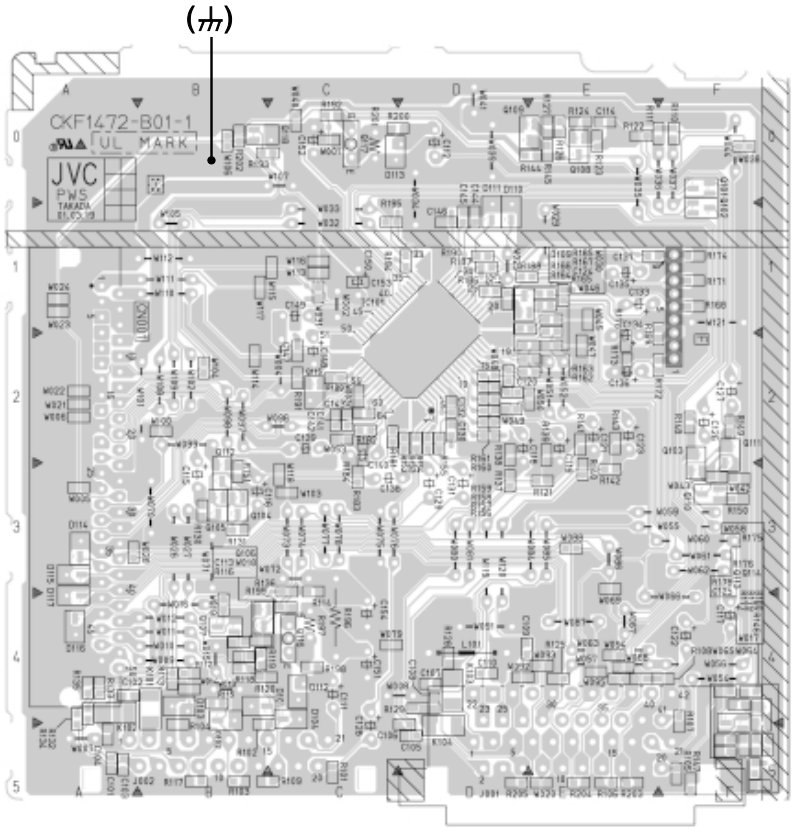
No.51818
Sept. 2001

AV SW PWB PATTERN

TOP



STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal	: Color bar signal
(2)Setting positions of each knob/button and variable resistor	:Original setting position when shipped
(3)Internal resistance of tester	:DC 20kΩ/V
(4)Oscilloscope sweeping time	:H ⇒ 20μS/div :V ⇒ 5mS/div :Others ⇒ Sweeping time is specified
(5)Voltage values	:All DC voltage values

∗ Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

●In the PW board :R1209→R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

●Resistance value

No unit	:[Ω]
K	:[KΩ]
M	:[MΩ]

●Rated allowable power

No indication	:1/16 [W]
Others	:As specified

●Type

No indication	:Carbon resistor
OMR	:Oxide metal film resistor
MFR	:Metal film resistor
MPR	:Metal plate resistor
UNFR	:Uninflammable resistor
FR	:Fusible resistor

*Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

●Capacitance value

1 or higher	:[pF]
less than 1	:[μF]

●Withstand voltage

No indication	:DC50[V]
Others	:DC withstand voltage [V]
AC indicated	:AC withstand voltage [V]

*Electrolytic Capacitors

47/50[Example]:Capacitance value [μF]/withstand voltage[V]

●Type

No indication	:Ceramic capacitor
MY	:Mylar capacitor
MM	:Metalized mylar capacitor
PP	:Polypropylene capacitor
MPP	:Metalized polypropylene capacitor
MF	:Metalized film capacitor
TF	:Thin film capacitor
BP	:Bipolar electrolytic capacitor
TAN	:Tantalum capacitor

(3)Coils

No unit	:[μH]
Others	:As specified

(4)Power Supply

:B1 :B2(12V)

:9V :5V

*Respective voltage values are indicated

(5)Test point

:Test point :Only test point display

(6)Connecting method

:Connector :Wrapping or soldering

:Receptacle

(7)Ground symbol

:LIVE side ground

:ISOLATED(NEUTRAL) side ground

:EARTH ground

:DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected , a fuse or any parts will be broken.

◇ **Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

◇ **NOTE**

Due improvement in performance, some part numbers show in the circuit diagram may not agree with those indicated in the part list.

When ordering parts, please use the numbers that appear in the Parts List.

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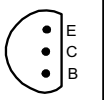
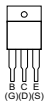
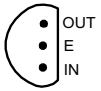
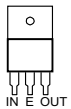
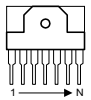
SEMICONDUCTOR SHAPES

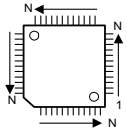
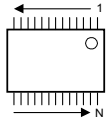
TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR

IC

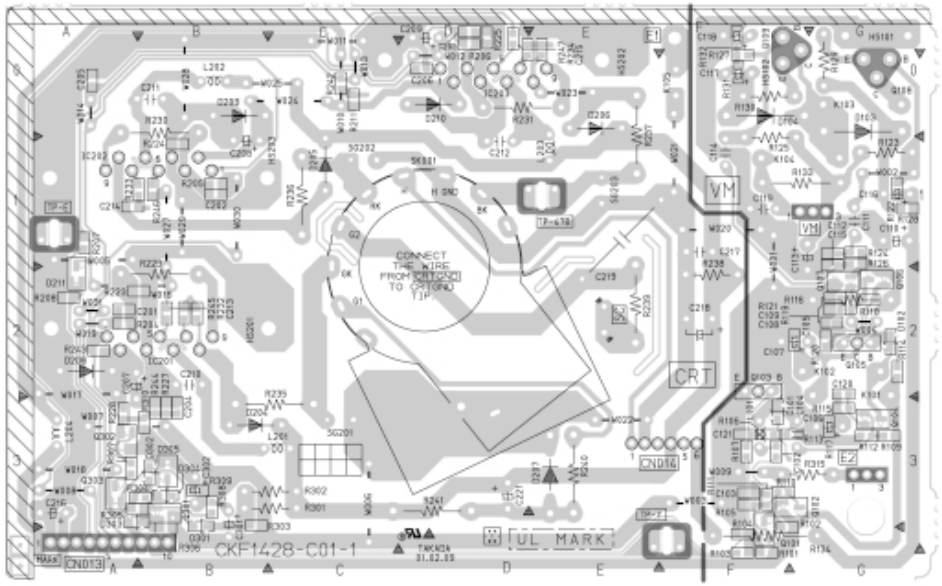
BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

CHIP IC

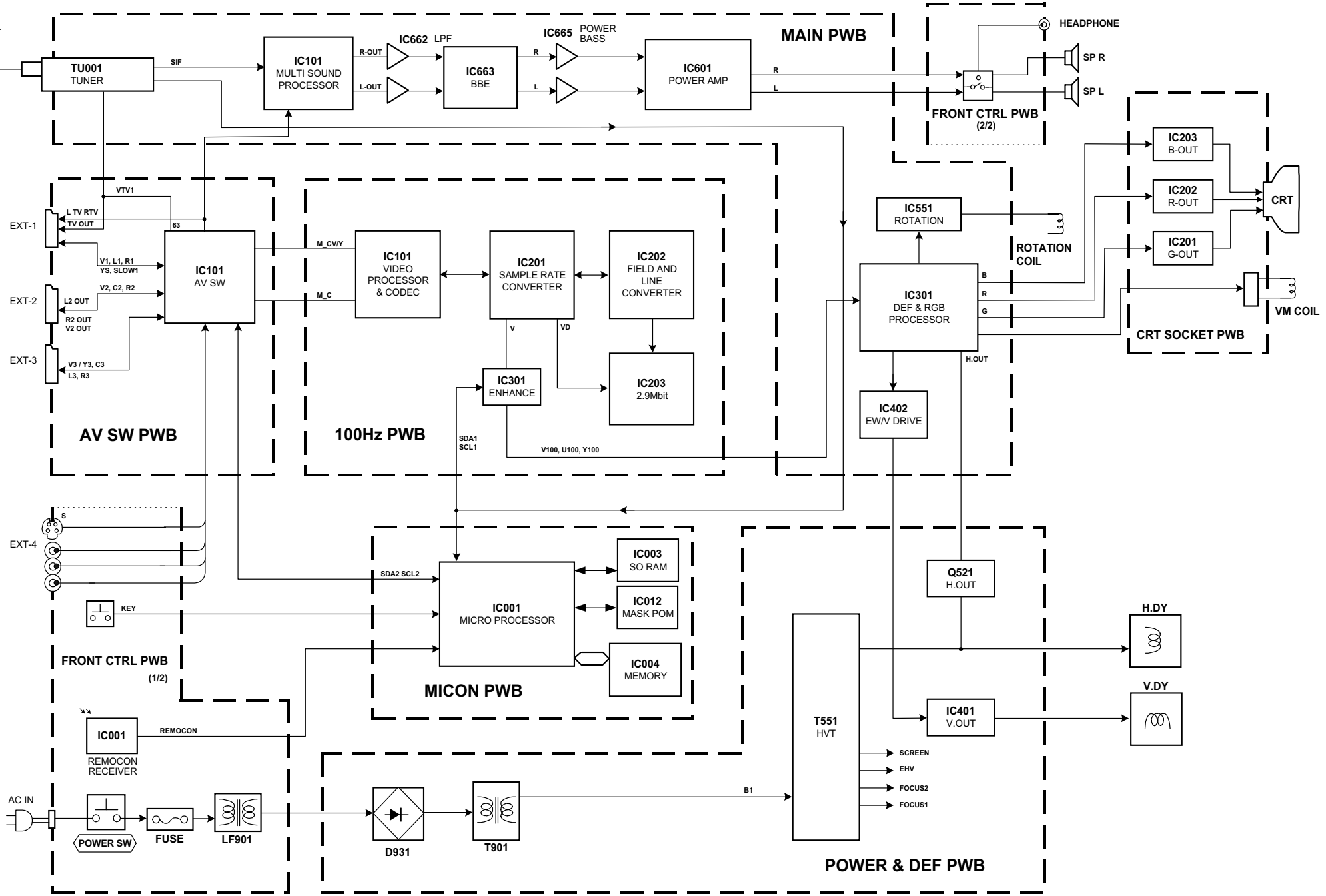
TOP VIEW		
		

CRT SOCKET PWB PATTERN

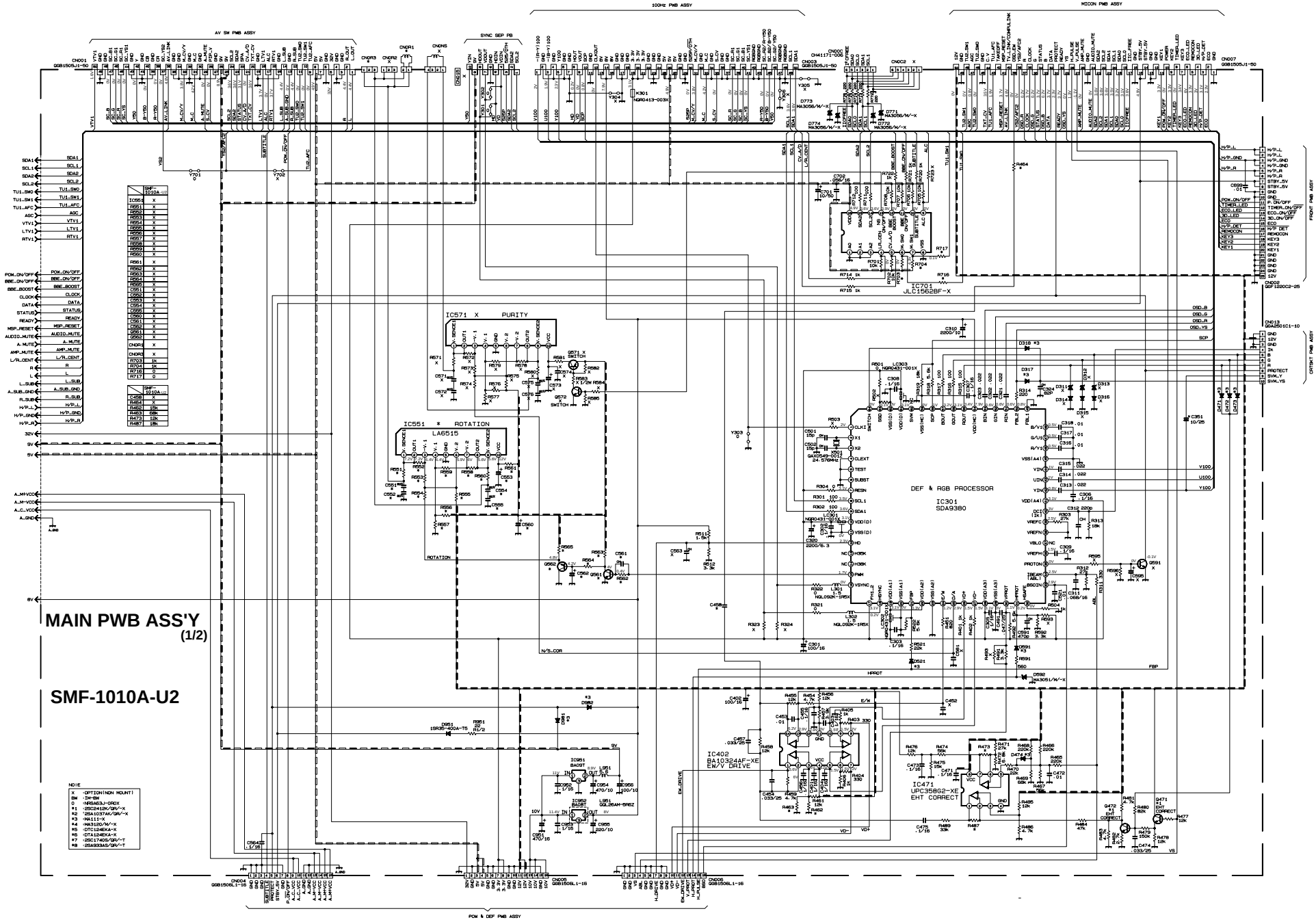
TOP

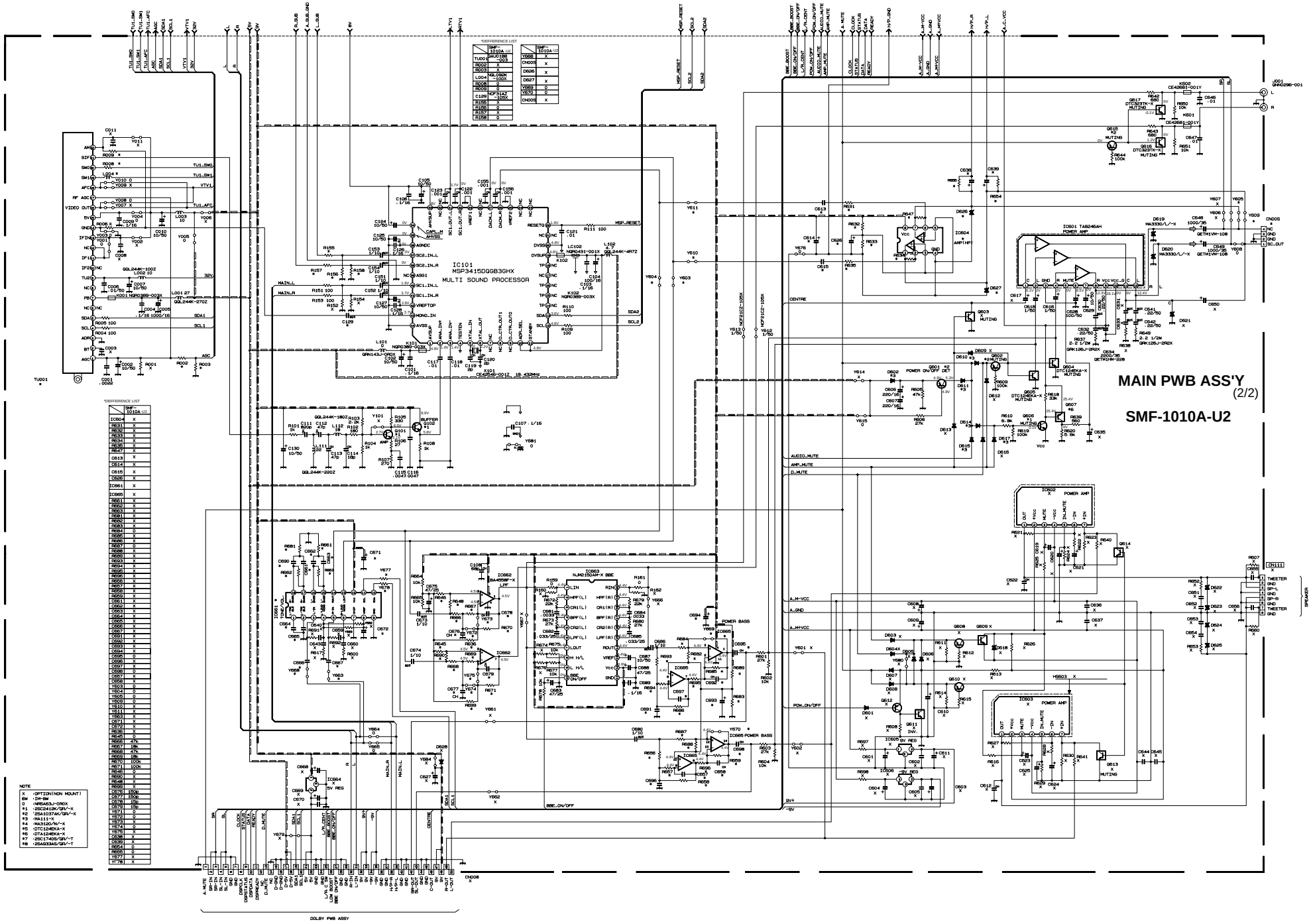


BLOCK DIAGRAM

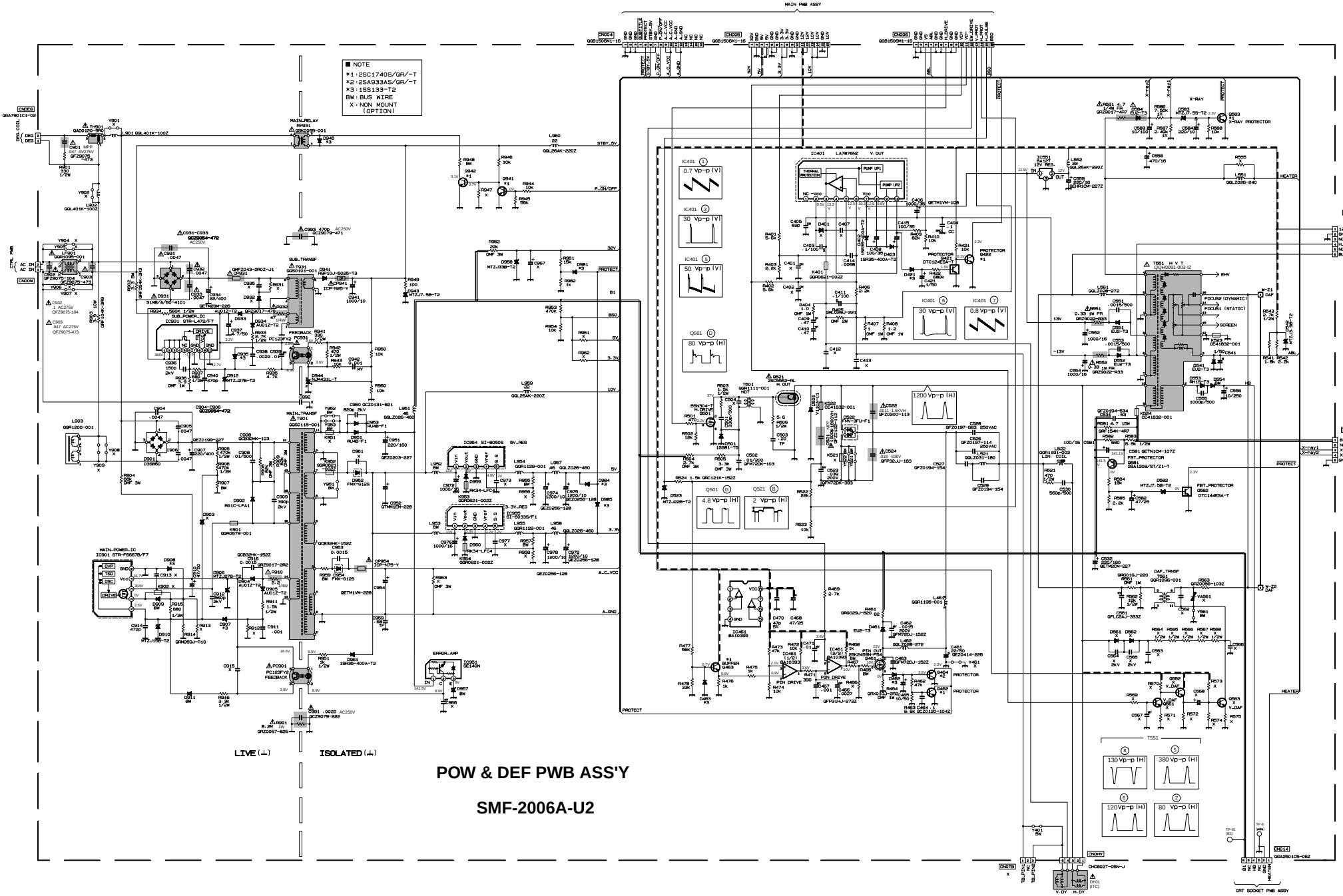


CIRCUIT DIAGRAMS *MAIN PWB CIRCUIT DIAGRAM*

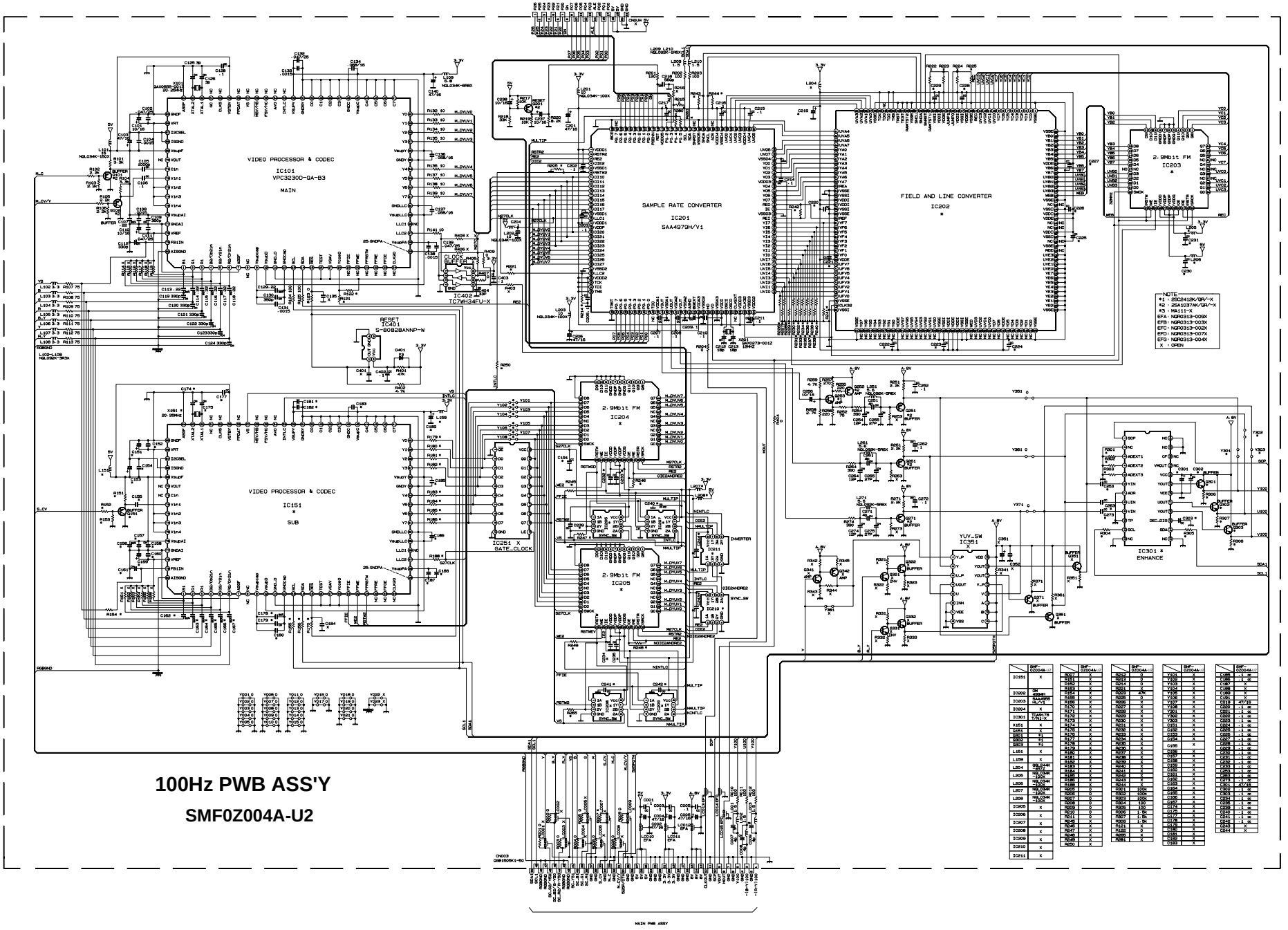



MAIN PWB ASS'Y
(2/2)
SMF-1010A-U2
IC101
MSP3415DQGB3GHX
MULTI SOUND PROCESSOR
IC601 TA8246AH
POWER AMP
IC602
POWER AMP
IC603
POWER AMP
IC604
AMP/HP
IC605 9V REG
IC606 -9V REG
IC664
5V REG
IC665 POWER BASS
IC666 POWER BASS
IC667
NJM2150AM-X BBE
IC668
BA4558F-X LPF
IC669
BA4558F-X
TONE/VOL
IC662
BA4558F-X
IC663
BA4558F-X
BUFFER
AMP
TU001
CN008
CN111
SPEAKER
DOLBY PWB ASSY
MAIN_L
MAIN_R
CENTRE
AUDIO_MUTE
AMP_MUTE
D_MUTE
BBE_ON/OFF
PDW_ON/OFF
A_H-VCC
A_GND
A_H+VCC
9V+
-9V
MUTING
POWER ON/OFF DET
*DIFFERENCE LIST
NOTE
X :OPTION(NON MOUNT)
BW :1M-BW
0 :NRS463J-ORGX
#1 :2SC2412K/QR/-X
#2 :2SA1037AK/QR/-X
#3 :MA111-X
#4 :MA3120/M/-X
#5 :DTC124EKA-X
#6 :DTA124EKA-X
#7 :2SC1740S/QR/-T
#8 :2SA933AS/QR/-T

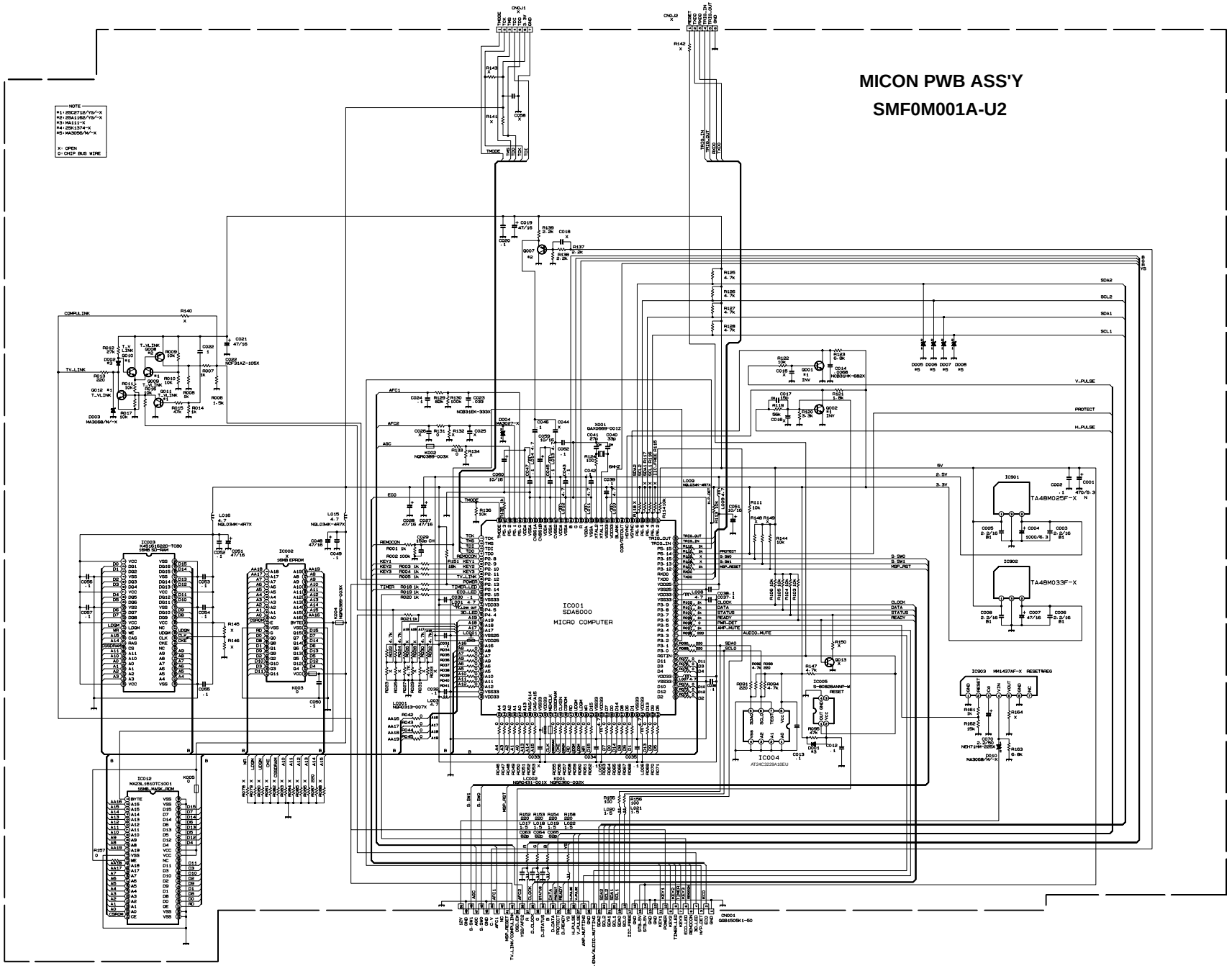
POWER & DEF PWB CIRCUIT DIAGRAM



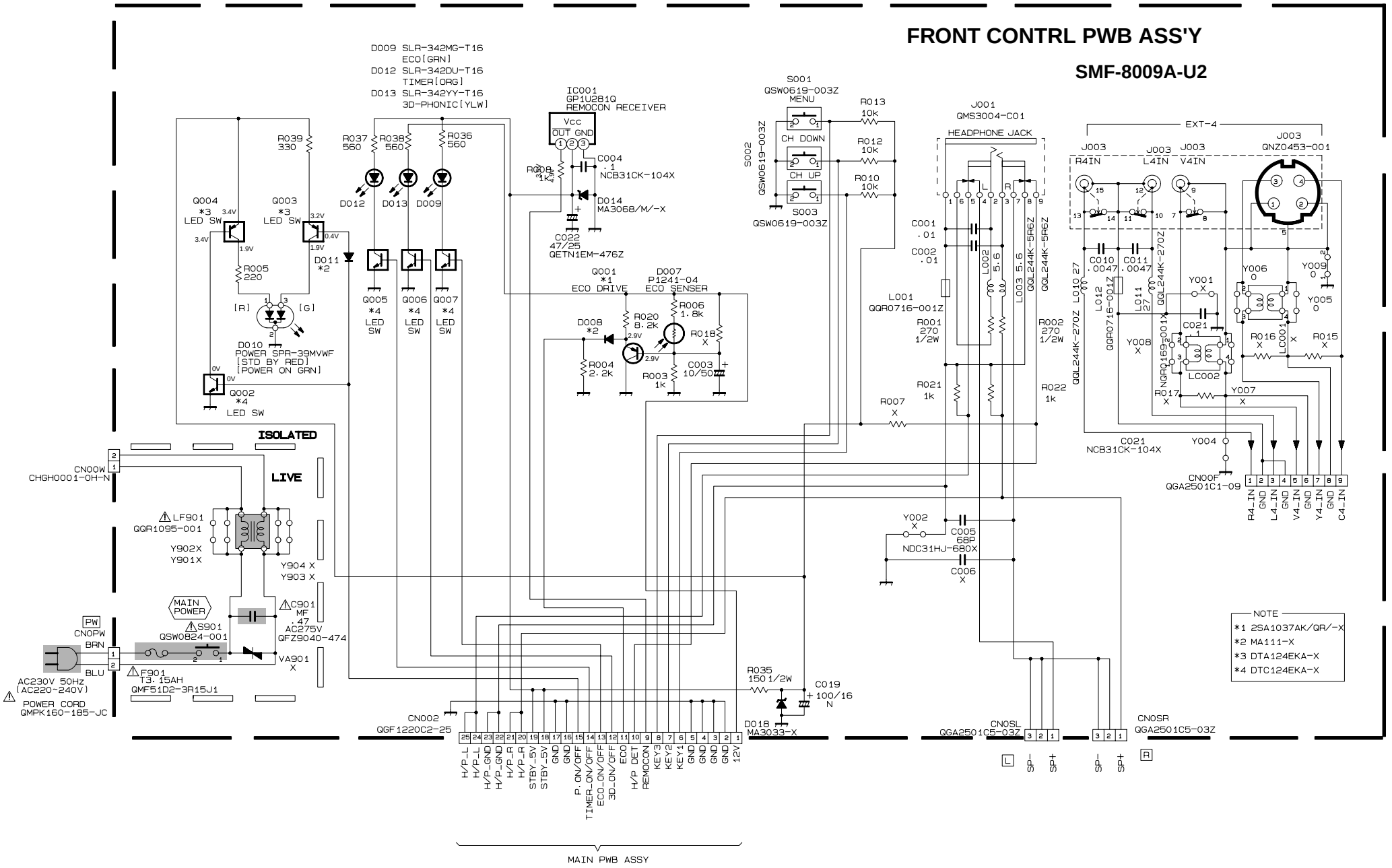
100Hz PWB CIRCUIT DIAGRAM



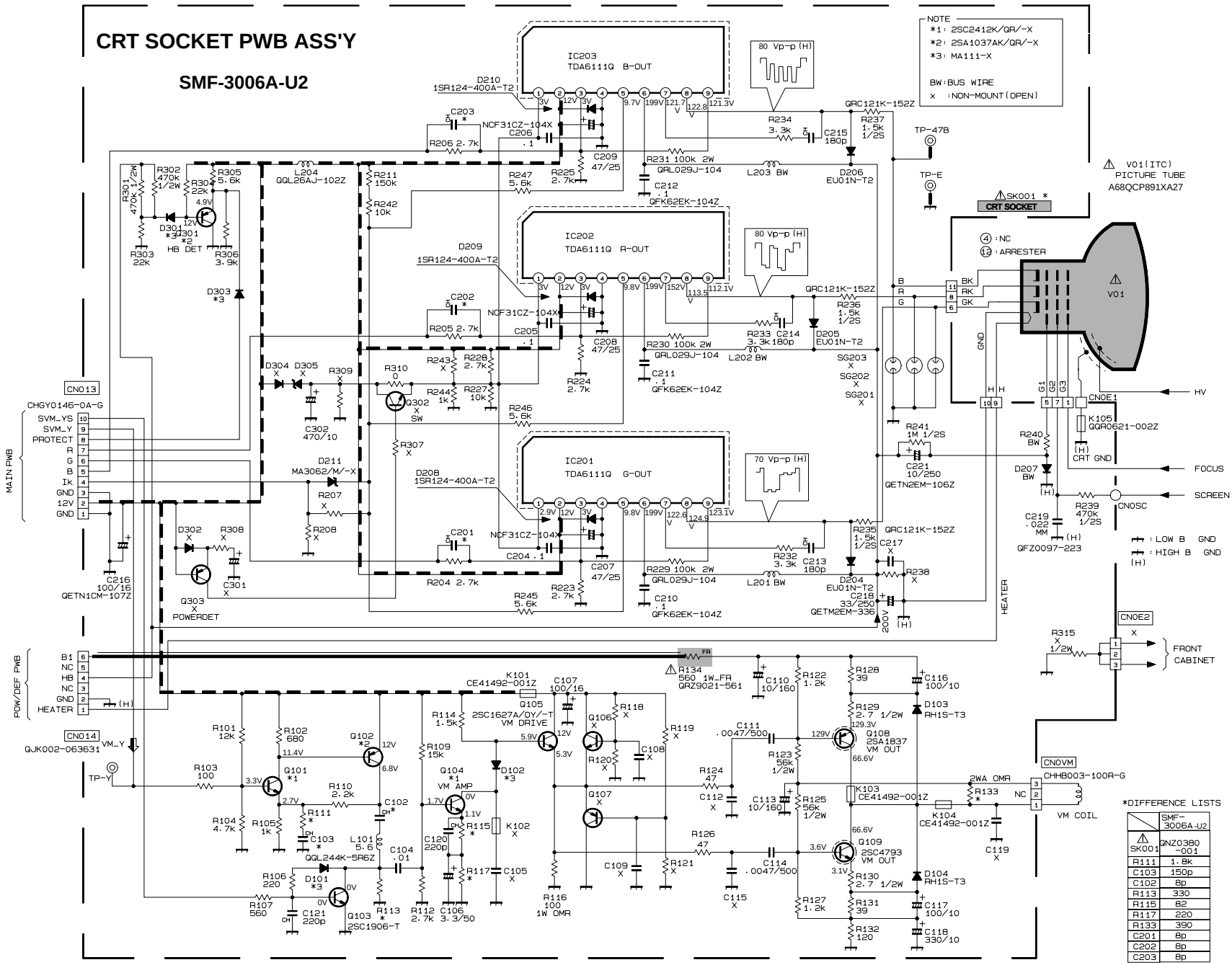
MICON PWB CIRCUIT DIAGRAM



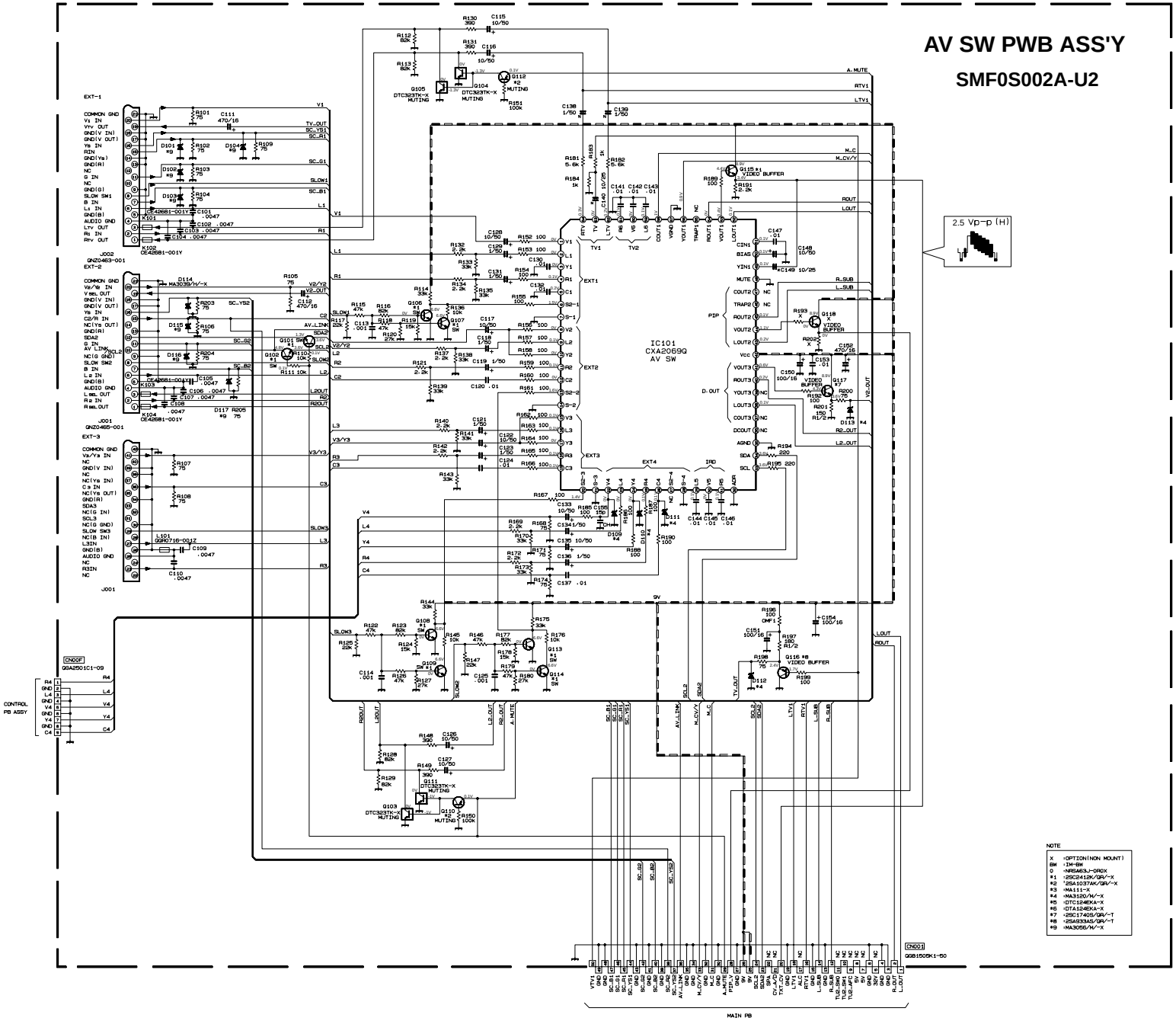
FRONT CONTROL CIRCUIT DIAGRAM



CRT SOCKET PWB CIRCUIT DIAGRAM

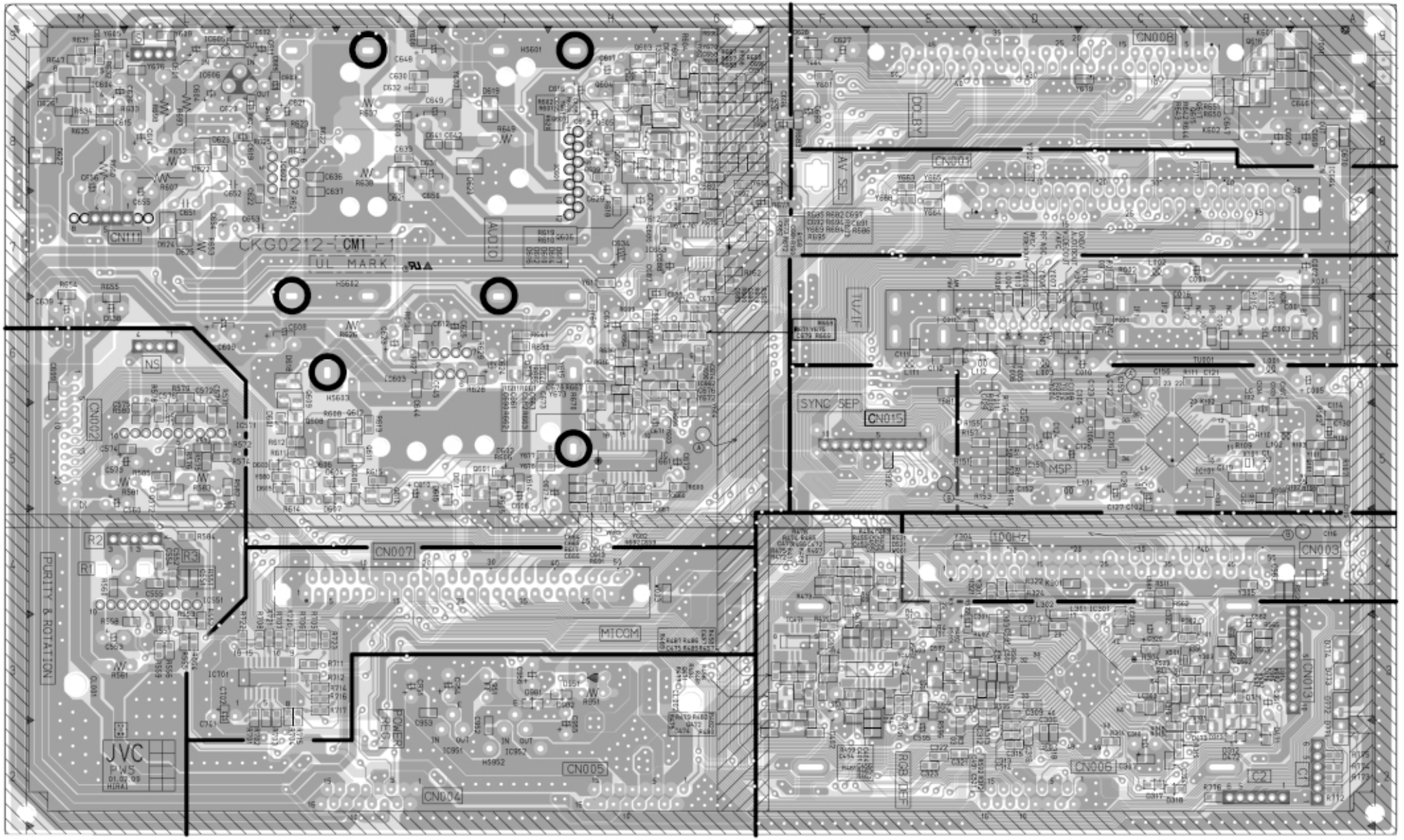


AV SW PWB CIRCUIT DIAGRAM

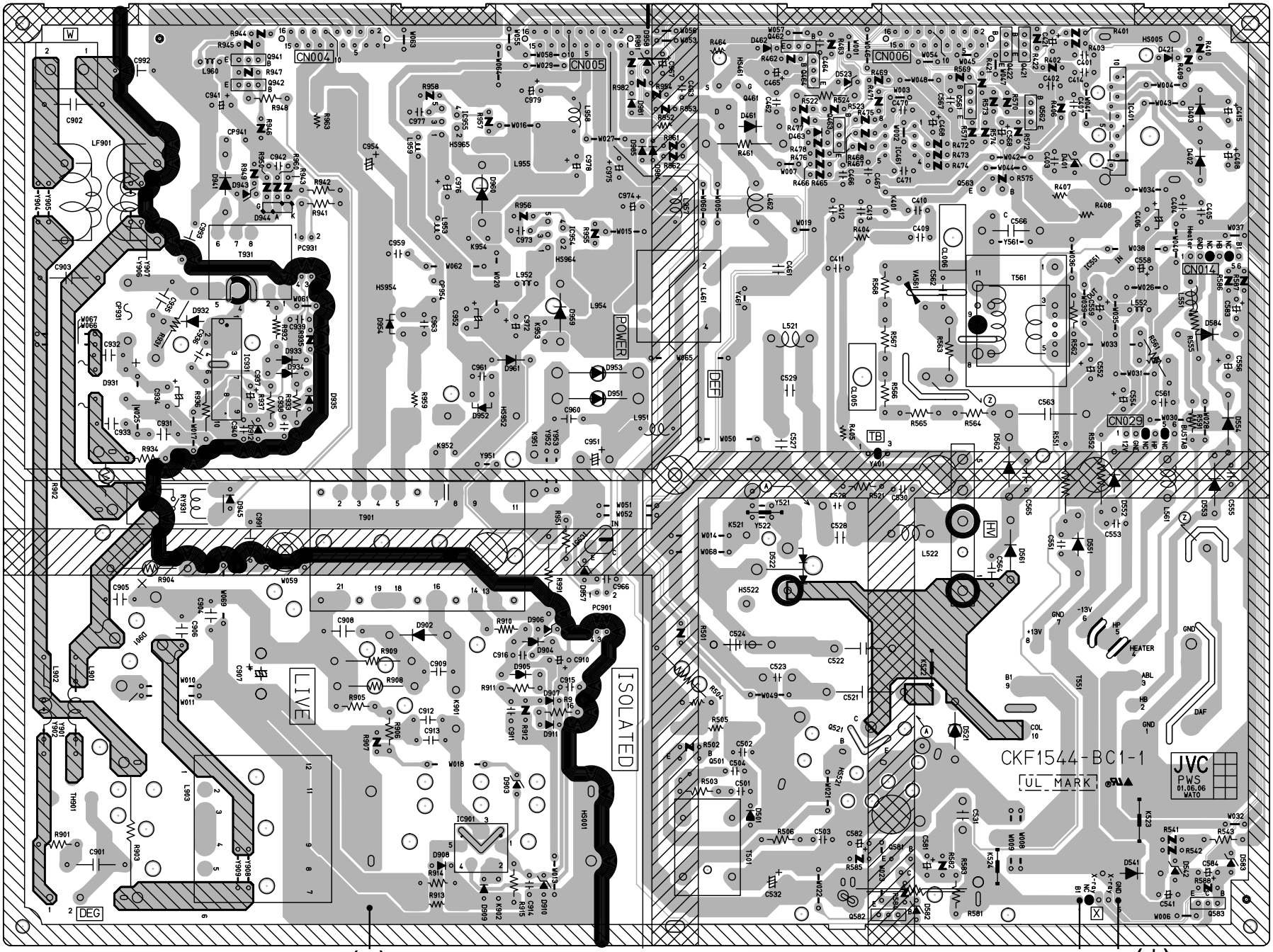


PATTERN DIAGRAM *MAIN PWB PATTERN*

FRONT

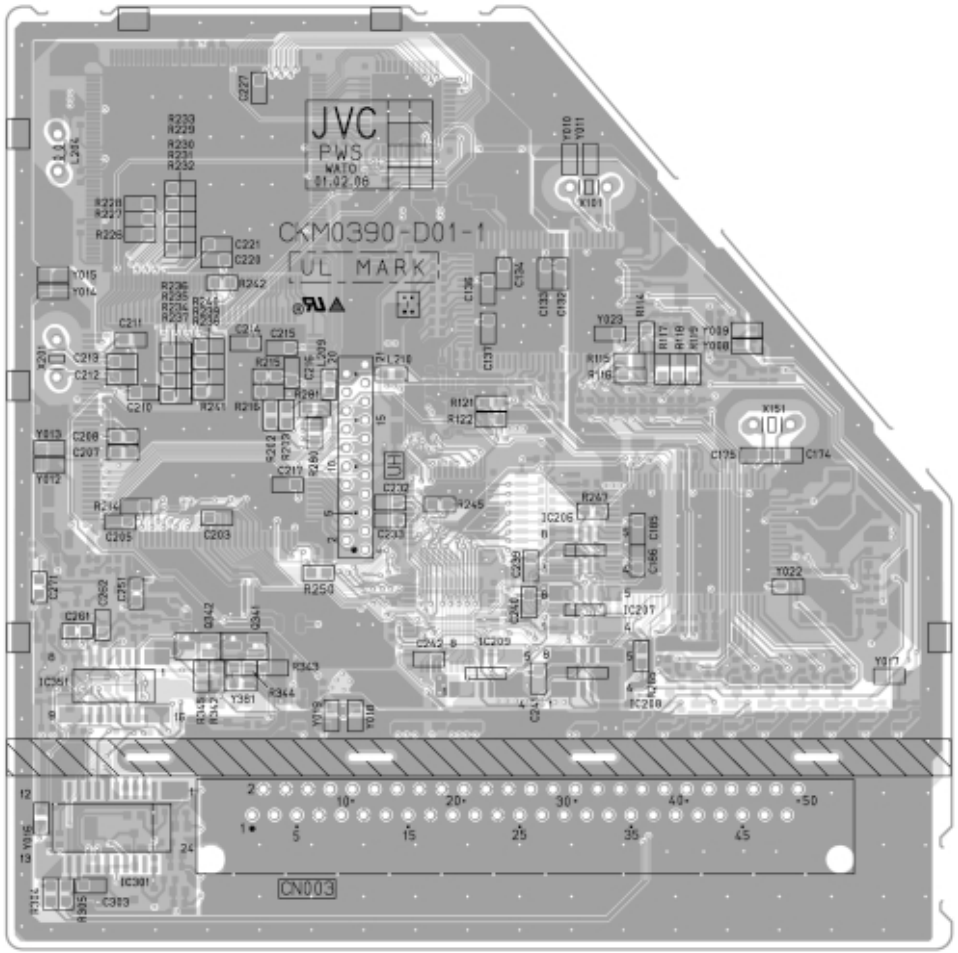


POWER & DEF PWB PATTERN



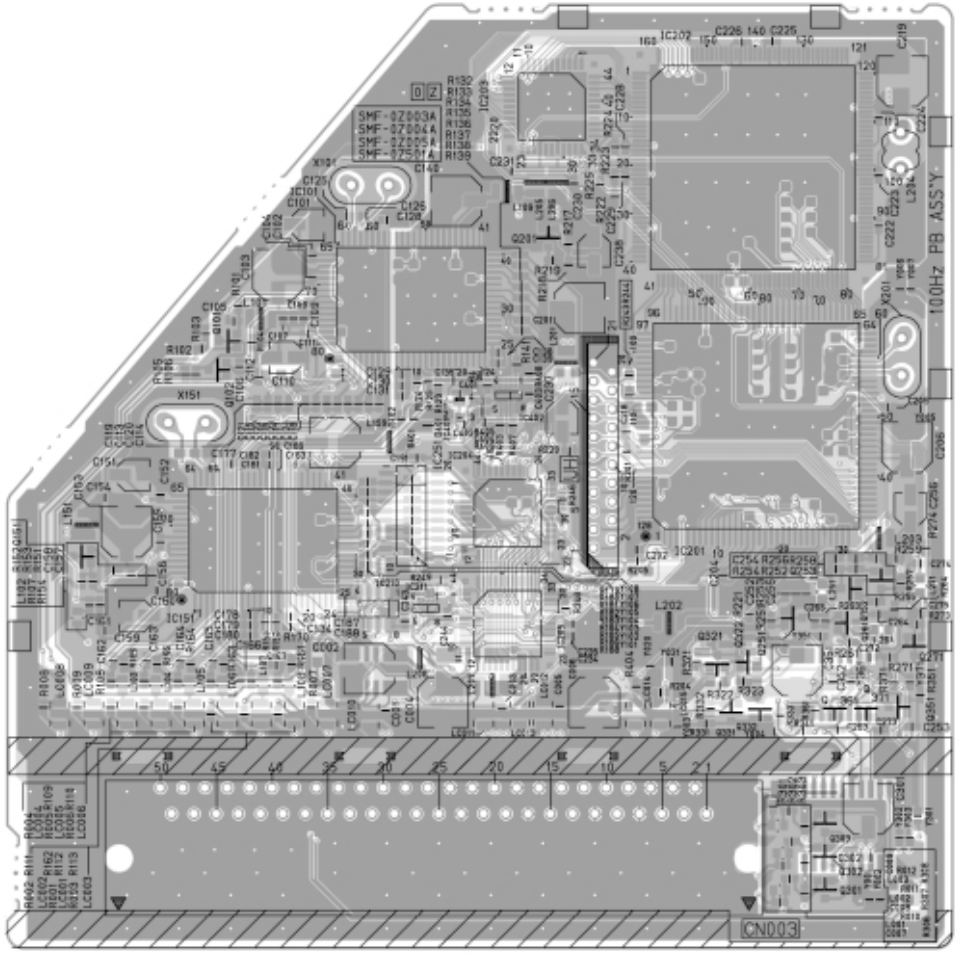
100Hz PWB PATTERN (SOLDER SIDE)

TOP



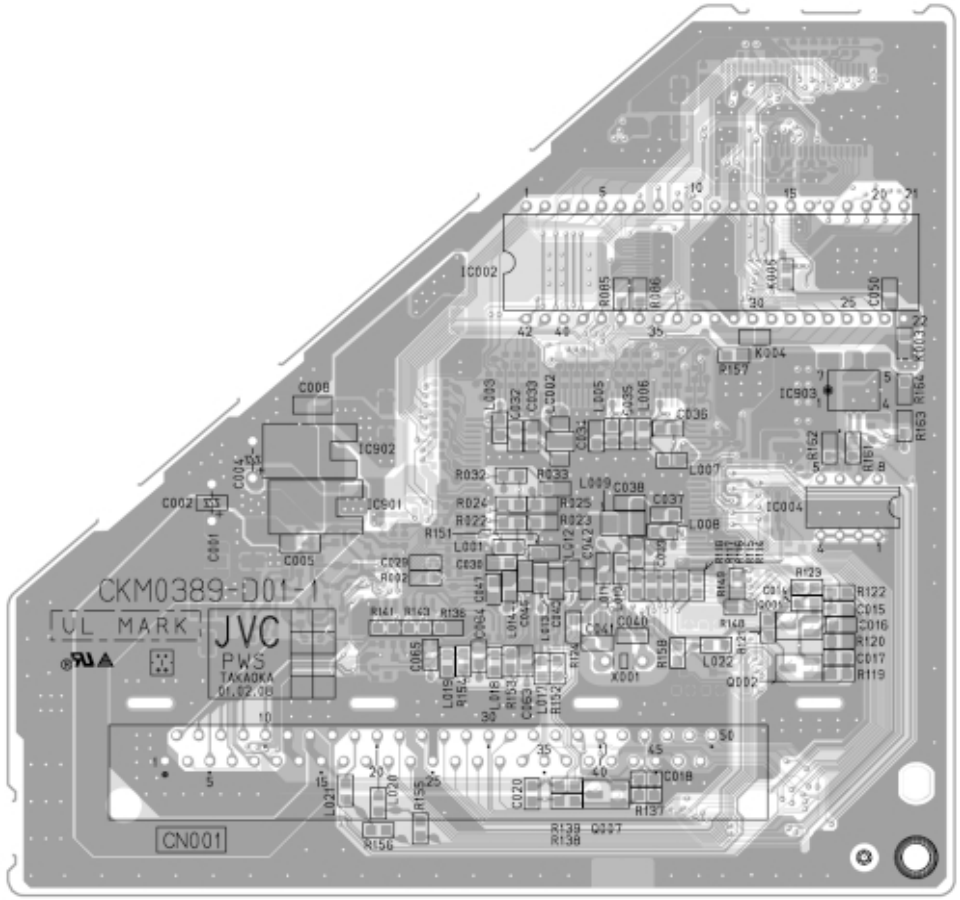
100Hz PWB PATTERN (PARTS SIDE)

TOP



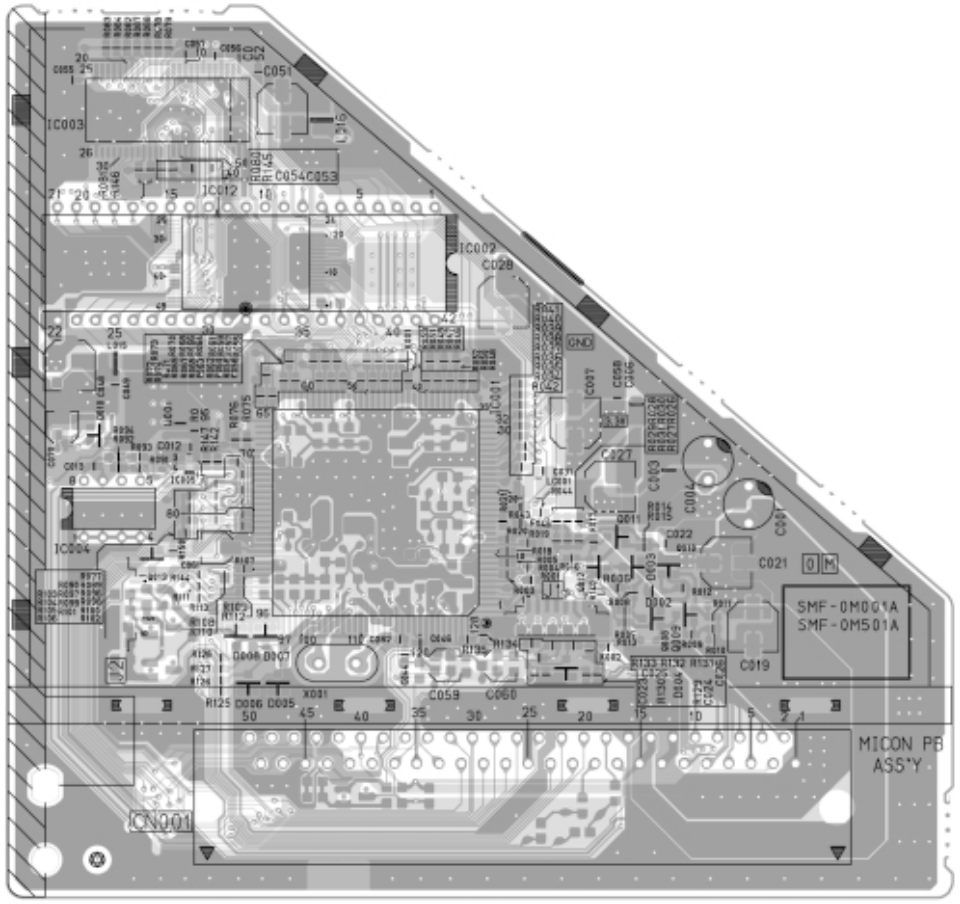
MICON PWB PATTERN (SOLDER SIDE)

TOP

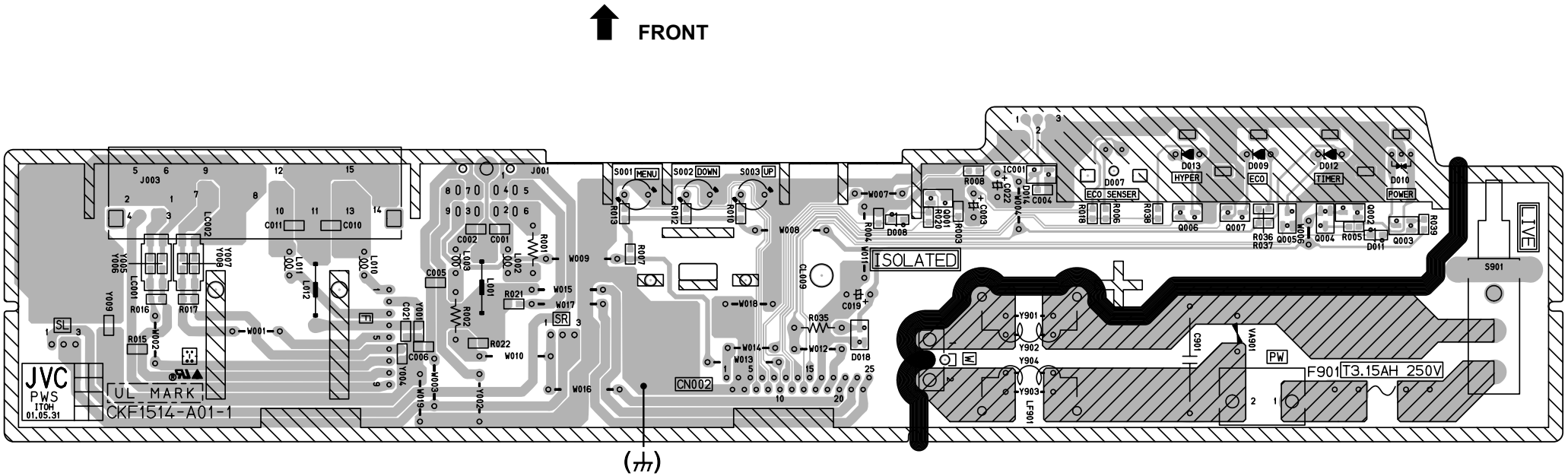


MICON PWB PATTERN (PARTS SIDE)

TOP



FRONT CONTROL PWB PATTERN



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